The Croonian Lectures

ON

A NEW DEPARTURE IN CONNEXION WITH DIABETES.

Delivered at the Examination Hall, Victoria Embankment, June 28th,

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Specially reported for THE LANCET *and revised by the Author.*

LECTURE IV.

MR. PRESIDENT, COLLEAGUES, AND GENTLEMEN,—The evidence I placed before you at my last lecture, I think, sufficed to show that when experimental procedure is shorn of fallacy nothing remains in support of the glycogenic theory. The evidence, I consider, went further, and also showed that the glycogenic theory cannot possibly hold good, because it implies the presence of conditions incompatible with the existing order of things. It implies, for instance, the passage of sugar through the general circulation to the systemic capillaries for destruction—a functional transport in which the sugar would also pass to the kidney. It happens to be the same current of blood passing to the kidney that passes to the systemic capillaries, and whatever sugar reaches it will reveal itself by escaping with the urine, the urine constituting, as is conclusively demonstrable, a most delicate indicator of the entry of sugar in any way into the general circulation. If the blood traversed first the systemic capillaries, and then went to the kidney after the removal of sugar, the position would be removed from incompatibility. If the sugar also assumed to pass from the liver were destroyed in its transit through the lungs, and thus was not permitted to reach the arterial system, again the position would be removed from incompatibility. Under the circumstances actually existing, whatever sugar reaches the general circulation is placed in a position to be drawn upon by the kidney and appear in the urine. Even with the small amount of sugar existing as a standard constituent of the blood, and standing quite independently of ingestion of carbohydrate, there is a corresponding small amount of sugar in the urine, and in proportion as the amount of sugar is in any way increased in the general circulation so it becomes increased in the urine. In this way the state of the urine naturally observed to exist affords evidence of a positive nature against the validity of the glycogenic doctrine. There is no doubt, it must be conceded, that carbohydrate matter exists throughout the different parts of the body. Carbohydrate matter is supplied to us in our food, and if it does not pass from the seat of ingestion in the manner formerly supposed the problem presents itself for solution as to how it does pass. This point I will now proceed to consider.

THE QUESTION OF NATURAL DISPOSAL OF CARBOHYDRATE MATTER.

The question, then, presenting itself for consideration to-day is the manner in which carbohydrate matter becomes disposed of in the system without the opportunity being afforded of it passing in a free state to the tissues and so being placed in a position to be drawn upon by the kidney. I lay stress upon the word "free." We may have it in a locked up or combined state without its passing off with the urine, but if in a free state it does. Every fact I know of, alike connected with diabetes and health, conspires to render it a *sine quâ non* that for detention and utilisation the sugar derivable from the carbohydrate matter of our food must not be permitted to reach the general circulation in a free form. The ground being cleared and the field open for fresh study, let us see what we are led to in following ingested carbohydrate with the aid of a new line of inquiry. A person partakes of food containing carbohydrate matter. Taken in the form of glucose, maltose, lactose, and cane sugar it is, as we know, in a suitable state for absorption without requiring preliminary digestion. On the other hand, taken in the form of starch, the principle which yields far more of our carbohydrate than we get from any other source, the aid of digestion is needed as a preparatory step to absorption. Digestion means ferment action, and the effect of ferment action, no matter where it takes place, is to split up or break down complex molecules into simpler and smaller ones, with increase of hydration. In the process of starch digestion the very large starch molecule constituting the product of synthetic protoplasmic action occurring in the vegetable kingdom becomes first broken down into smaller ones, and these are then split up into dextrines and maltose to begin with, and ultimately into maltose, the process being attended with the increased hydration following upon the conversion of a carbohydrate of the amylose into one of the saccharose group. Exactly the same kind of process occurs in the digestion of our proteid food. Proteolytic ferment action is identical as regards kind of effect with amylolytic ferment action. By means of pepsine and the proteolytic ferments poured into the intestinal canal the large and complex proteid molecules of our food are split up or broken down into smaller and simpler ones with concurrent hydration and the formation of albumose and peptone. As I previously showed when speaking of the glucoside constitution of proteid matter, the effect of proteolytic ferment action upon the proteid molecule is not only to lead to the production of albumose and peptone but also to the liberation of sugar. This I demonstrated to you by means of the crystalline osazone procurable from the product derived from the digestion of pure albumen.

I may incidentally mention here that with the liberation of sugar from proteid matter by digestion we do not require to look to the exercise of a glycogenic function in the liver to account for the sugar derivable from the proteid constituents of animal food. Under the glycogenic doctrine the liver has been considered to be endowed with the power of breaking down albumen and giving rise to the production of sugar, but from what I have placed before you it becomes evident that we need not look to the liver for the performance of this process, seeing that it can be shown to take place as a result of digestion. That proteid should be broken down by digestion and sugar liberated stands in harmony with what might be naturally looked for. In the case of the liver, however, such cannot be said. Protoplasmic action does exactly the reverse of ferment action, and there are grounds for looking upon the liver as constituting an organ endowed, to an important extent, with the possession of protoplasmic power.

FERMENT ACTION OF DIGESTION FOLLOWED BY PROTOPLASMIC ACTION.

After the breaking up and hydrating influence of ferment action has been exerted upon the complex carbohydrate and proteid molecules of our food the opportunity is provided for protoplasmic action to come into play. The products of digestion as they lie in the intestinal canal become brought within the sphere of influence of living protoplasm. When speaking of the changes occurring in the vegetable kingdom I showed how the chemistry of life was made up, certainly in the main, of the successive play of ferment and protoplasmic actions, the effect of the one being to break down and hydrate, and of the other to synthesise and dehydrate, and the two leading, by their antagonistic effects, to the constant breaking down and building up processes observed to be going on in connexion with life. I have said that the products of digestion become brought within the sphere of influence of living protoplasm, and the living protoplasm to which I allude is that belonging to the villi which everywhere thickly stud the inner surface of the small intestine. If we look to the construction of a villus we find it to consist of a little vascular projection covered over with epithelial cells endowed apparently with very active protoplasmic power, judging from the change that occurs in them when absorption is going on. Besides these epithelial cells the villus contains, reaching even near to the surface, a number of exceedingly active protoplasmic bodies, called lymphoid cells. In the villus, then, we have active protoplasm, and, it may be said, active protoplasm so situated as to be advantageously placed for the exercise of its influence over the products of digestion.

EFFECTS OF PROTOPLASMIC ACTION ON THE PRODUCTS OF DIGESTION.

I showed at an early part of this course of lectures that living protoplasm is endowed with the power—(1) of synthesing carbohydrate and nitrogenous matter into proteid, (2) of transforming carbohydrate matter into fat, and (3) of transmuting carbohydrate matter to a lower state of hydration. I

have brought you to the point that ferment action has had its play upon our food and that the products of ferment action, in other words of digestion, are lying ready for the exercise of protoplasmic influence upon them. Let us see what evidence can be adduced pointing to the carbohydrate matter taken by us being disposed of by the exercise of protoplasmic power in the three directions I have named.

SYNTHESIS OF CARBOHYDRATE INTO PROTEID.

Carbohydrate matter in the form of sugar, whether derived from the digestion of starch or directly ingested, lies with peptone, derived from the digestion of nitrogenous matter, within the sphere of influence of the protoplasm belonging to the cells of the villi, and therefore in a suitable position for appropriation by protoplasmic action in the manner that takes place elsewhere. I cannot demonstrate in the same simple and clear manner as I did in the case of the yeast cell that the carbohydrate matter within the alimentary canal is synthesised into proteid, but we have as the first point the carbohydrate and the nitrogen-containing compound peptone lying in juxtaposition. Next, proteid in the shape of albuminoid matter is undoubtedly formed and the peptone disappears. The disappearance of peptone has puzzled physiologists to account for, but its synthesis with carbohydrate in the construction of albuminoid matter by protoplasmic agency tallies with what is wanted. Now, the proteid formed being a glucoside, means that it has carbohydrate locked up in it, and if locked up in it that the carbohydrate entered into its formation. From this train of reasoning are we not justified in considering, and especially knowing from the information otherwise supplied that protoplasm has the power of appropriating carbohydrate matter in the manner I am speaking of: I say, upon the grounds advanced, are we not justified in considering that the carbohydrate of ingestion contained in the alimentary canal becomes partly disposed of by application to proteid construction? Certainly a large amount of carbohydrate exists locked up in proteid everywhere throughout the body. Proteid, as it exists in our blood and tissues, does not enter the system as such. We construct it for ourselves out of the diffusible products of digestion, and I contend that its construction implies a corresponding appropriation of carbohydrate matter. In proportion to the amount of carbohydrate existing in a locked up or combined state in our proteids, so will have been the preliminary appropriation of ingested carbohydrate by protoplasmic synthetic action.

The lacteal system probably constitutes the chief channel for the passage of the newly formed albumen from the products of digestion into the system. The chyle, indeed, is spoken of as mainly consisting of oleo-albuminous matter derived from the villi. The experimental evidence before me is also suggestive that newly formed proteid may pass to a certain extent through the portal vein, for I have found that portal blood has yielded more cleavage carbohydrate than is obtainable under ordinary circumstances from the blood of the general circulation.

Disposed of in the way I have represented, we have an application of carbohydrate standing consistent with the requirements to be met. In combination under the form of proteid carbohydrate can be conveyed through the general circulation to the tissues without elimination with the urine, whilst if permitted to reach the general circulation in a free state it could not fail to be drawn upon by the kidney, and thereby render the urine saccharine. As the ferment action of digestion can be shown to split up proteid with the cleavage of sugar, so after appropriation to the growth and nutrition of the tissues it may be subsequently broken down, for everywhere building up and breaking down processes are contemporaneously going on, and give rise to the liberation of either glycogen or sugar. I admit that we are here to a certain extent in the domain of surmise; but what is observed in extreme cases of diabetes renders it evident that sugar can be derived from the tissues, and we can only look to ferment action as the source of what occurs. I have spoken of the chemical changes of life being the result mainly, if not entirely, of a delicately balanced play of protoplasmic and ferment actions. It is the province of the former to build up and of the latter to break down, and the undue breaking down of tissue and liberation of sugar noticeable in the form of diabetes referred to may be attributable to the occurrence of an undue play of ferment action.

TRANSFORMATION INTO FAT.

Let me now proceed a step further and consider the question of disposal of carbohydrate matter by conversion into fat. Some time ago it was a disputed point as to whether animals could form fat from carbohydrates or not. The question, however, must now be considered as having been completely set at rest. No doubt whatever can be entertained about animals having the power of forming fat from carbohydrate food; indeed, under suitable conditions they constitute very large fat producers. It is by protoplasmic agency—the power with which living protoplasm is endowed—that the transformation is effected. The yeast cell growing in a medium in which sugar is present as the sole carbon ingredient affords absolute proof that protoplasm can convert carbohydrate into fat. Yeast has been shown by Pasteur to contain fat, and under the circumstances no source exists for it besides the carbohydrate. In the higher vegetable organisms the production of fat takes place upon a large scale from carbohydrate. In the case of the oily seeds it is open to observation that the fat is preceded by starch.

Upon the question of the precise manner in which carbohydrate is transformed into fat I cannot say much. It is not, I consider, for a moment to be assumed that anything like a direct transformation occurs. Living protoplasm is undoubtedly a necessary factor in connexion with the operation. Without its instrumentality, brought to bear in some part or other of the process, there would be no result. It is possible that what the living protoplasm does is to appropriate carbohydrate to the construction of proteid. From this proteid by a subsequent action—and the action here is not synthetic or protoplasmic, but of a breaking down or ferment nature—fat may be cleared off. The view I have outlined harmonises with the course of events observable in connexion with what we call fatty degeneration and with many other considerations.

I am going now to direct your attention to the villi which thickly clothe the whole extent of surface of the small intestine, and which from their great multiplicity must constitute a working agency of no mean importance, whatever the office they perform. It is known that after the ingestion of a fatty meal the villi present a very different appearance from that presented at the period of fasting. Their cells become charged with fat, and fat is traceable through the centre of the villus into the lacteal vessels. Concurrently the lacteals coursing through the mesentery become conspicuously visible from the milky chyle they contain, and if the receptaculum chyli is cut into a quantity of milky chyle escapes. Such is what is observable after the direct ingestion of fat, and the account given of the course of phenomena occurring is that after emulsification in the intestine the fat in the finely divided state to which it has been reduced simply becomes absorbed or taken into the epithelial cells and by these is discharged into the centre of the villus.

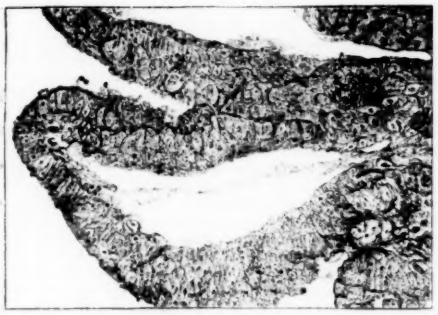
Having proceeded thus far with what I started out to say about the villi, I have next to tell you that the description I have given of the appearances seen after the direct ingestion of fat exactly applies to those observable after the ingestion of carbohydrate food. I have known for years that this condition after carbohydrate food exists, but I did not realise until recently the meaning to be attached to it. As a matter of fact, if a rabbit be taken about four hours after being fed with oats, killed, and the abdomen immediately opened, evidence is present that a free flow of fat is taking place through the lacteals. Instead of the walls of the intestine looking more or less translucent and watery, as at a period of fasting, they are opaquely white, with streaky collections of milky chyle in view beneath the peritoneal surface. The lacteals of the mesentery are also conspicuously visible as a result of the extent to which they are charged with milky chyle. Further, the receptaculum chyli is readily discernible, and when cut into there flows from it a strongly milky chyle. It is not too much to say that I have sometimes seen as marked a milky condition throughout existing as in the carnivorous animal after the designed administration of fatty food; microscopic examination of the villi reveals identically the same appearance in the two cases. In the fasting rabbit the epithelial cells are pretty uniformly columnar and granular, and only here and there is a cell to be seen presenting any appearance of fat. After a meal of oats, however, cells are to be freely seen loaded with small and large globules of fat. Many of the cells, also, as they are lying in a detached state in the field, are perceived to present an altered form, being more or less conical or it may be spheroidal, and in this latter state looking very much like fat-loaded cells of the liver. In the villus itself the fat is readily to be brought into view by the blackening effect of osmic acid. Pieces of intestine have been taken, and after treatment in the

ordinary manner with osmic acid have been subjected to the usual process for section cutting. In the villi of fasting only a non-fatty granular appearance is to be perceived; in the villi, on the other hand, after feeding with oats blackened fat is extensively to be seen, and often the coursing down of fat globules in the centre of the villus is beautifully displayed.

I propose now to show you by the aid of lantern slides what I have endeavoured to represent by words, but I must first fulfil the promise I made in my last lecture and show you crystalline osazones obtained from the sugar of healthy urine.

[Dr. Pavy here exhibited by lantern slides micro-photographic representations of osazone crystals obtained from the healthy urine of the human subject and from the urine of the

FIG. 1.

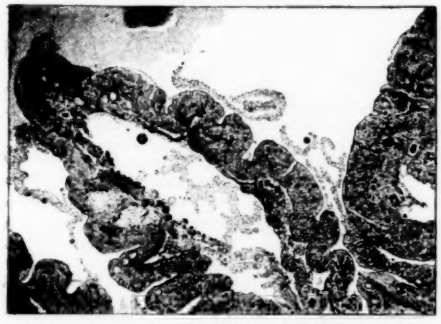


Section of Villus from Fasting Rabbit.

horse, rabbit, and dog. He then exhibited representations of the cells and of sections of the villi of rabbits taken at a period of fasting and after feeding with oats. We reproduce representations of sections of villi derived from a fasting rabbit and from a rabbit after being fed with oats.]

Hence, from what I have placed before you it is seen that the villi and lacteals are highly charged with fat after the ingestion of carbohydrate food. The oats consumed contained 5 per cent. of fat, which is totally inadequate to account for the result produced, and it is only when the animal is in a good vigorous condition—a condition conducive to the exercise of protoplasmic action—that a marked fatty appearance is witnessed. Oats given to a sickly animal do not produce a like effect. Nothing, indeed, of fatty appear-

FIG. 2.



Section of Villus from Rabbit after the Ingestion of Oats.

ance is to be seen unless the animal is in a healthy state and the food given is congenial to it.

With the formation of fat from carbohydrate by protoplasmic agency in the villi, fat reaches the system in precisely the same way as when supplied in a direct manner from without. The end is the same, and it is only the source that differs: in the one case the fat is absorbed ready formed from the intestinal canal by the villi; in the other the fat is formed by the protoplasm of the villi from the carbohydrate matter of the food. When formed it passes to the lacteals just as occurs with the fat derived from introduction from without. Animals are incontestably fat producers from carbohydrate food, and under the view I have put before you the seat of production is in the villi, where the carbohydrate matter is first brought under exposure to protoplasmic influence. Here, then, we have to look for the primary connexion of carbohydrate matter with obesity and the intentional application of it to the fattening of animals.

It will be noted that the disposal of carbohydrate by conversion into fat by the agency of the villi stands in compliance with the requirements to prevent sugar reaching the circulation and passing off with the urine. There is yet another process which tends to the accomplishment of the same object and of this I will now speak.

TRANSMUTATION OF SUGAR INTO GLYCOGEN.

Protoplasm has further the power of changing carbohydrate matter in the direction of reduced hydration, an operation the reverse of that arising from ferment action. Whatever absorbed carbohydrate escapes application in the villi to the construction of proteid and the production of fat reaches the portal vein in the form of sugar, and is thence conveyed to the liver. Here, as you are aware, glycogen is to be met with, and the amount present is found to stand pretty much in proportion to the richness of the food in carbohydrate matter, and specially so when conjoined with deficiency of nitrogenous matter. The less the amount of carbohydrate applied by protoplasmic agency in the villi the larger will be the amount to be transmitted to the liver. Reaching the liver in the form of sugar it falls within the sphere of influence of the cells of the organ. By protoplasmic action here exerted reduction in hydration with transformation into glycogen occurs. The liver, we may consider, in this transforming operation supplies a supplementary agency for checking the passage of free carbohydrate matter into the general circulation. In the form of glycogen it is non-diffusible and can be retained, and, lying in the cells within the sphere of influence of living protoplasm, it is suitably circumstanced for subsequent gradual appropriation in the same direction as elsewhere occurs through the instrumentality of protoplasmic action. To pass into sugar, as under the glycogenic doctrine is conceived it does, would be contrary to the principle of action required to be in operation to prevent the urine becoming saccharine.

NEW DEPARTURE IN CONNEXION WITH DIABETES.

The new departure in connexion with diabetes which has given origin to the title applied to these lectures consists of what I have placed before you regarding the appropriation of carbohydrate matter in such a way as to prevent its entering the general circulation in a free form. This I am absolutely convinced it cannot do without a corresponding appearance in the urine. Whatever else may be open to dispute I contend that it is an essential point for the maintenance of the urine in a non-diabetic state that ingested carbohydrate should not be allowed to reach the general circulation in the form of sugar. From what I have stated it is seen that there exist two lines of defence to prevent it doing so. The first line of defence is presented by the arresting effect of the protoplasmic action carried on within the villi. The portion of carbohydrate which passes this line of defence meets in the liver with a second opposing influence which, under ordinary and natural circumstances, effectually prevents its reaching the general circulation. The necessity of the second or supplementary line of defence presented by the liver is obvious; it not only deals with the sugar which may escape stoppage in the villi, but with the sugar which becomes absorbed from the stomach, where there is nothing to impede its free passage into the portal system.

HEALTH AND DIFFERENT FORMS OF DIABETES.

To be kept free from diabetes the power of disposing of carbohydrate matter in such a manner as to place it in a position to be utilisable in the system must be equal to preventing sugar from reaching the general circulation. When the protoplasmic power is equal to meeting the demand created by an ordinary consumption of carbohydrate matter the urine is maintained in a proper or healthy state; but in no instance does the power of maintaining this state exist to an unlimited extent. In ourselves and likewise in the lower animals the ingestion of carbohydrate, especially if given in the form of sugar, can be pushed to such an extent as to exceed the capacity of proper disposal, and thereby lead to the production of saccharine urine.

In diabetes the power is short of what it should be. Where only a little short it is only when carbohydrate matter is ingested in excessive quantity—in quantity, however, which

does not produce any effect in a healthy subject—that sugar shows itself in the urine. As the power falls shorter and shorter of what is natural, so a less and less quantity of carbohydrate can be taken without running to sugar in the urine. Each case has its own special limit of assimilative power associated with it. When carbohydrate is taken within the limit of power of disposing of it there is no sugar in the urine. When carbohydrate, on the other hand, is taken beyond the limit of assimilative power possessed sugar is eliminated and the amount eliminated stands in proportion to the extent to which the ingestion has exceeded the capacity for proper disposal. As long as sugar is present in the urine evidence exists that the system is being supplied with more carbohydrate than it can properly dispose of. To supply more stands contrary to rational procedure, as it simply adds to the surplus to be eliminated, and in doing so adds to the deviation from the natural state arising from the improper passage of sugar through the system already existing. Experience shows that this passage of sugar through the system not only constitutes the source of the symptoms of diabetes but leads to a growth of the condition at the foundation of the disease—I mean leads to whatever assimilative power exists becoming further diminished. The reverse, however, is what is wanted. If the protoplasmic or assimilative power could suddenly be restored to its proper capacity there would be an immediate disappearance of diabetes. Carbohydrate in ordinary amount could then be taken, and from the natural power of properly disposing of it existing no opportunity would be afforded for its escape with the urine. The aim before us in the treatment of diabetes is to bring back the missing assimilative power, and in many cases amongst patients above the middle period of life this is more or less completely to be done. For its attainment nature requires to be aided by dietetic management directed to keeping the system in a natural state, or, in other words, keeping it free from the unnatural passage of carbohydrate through it; but restriction from carbohydrate food should not be carried beyond what is necessary to keep the urine free from sugar. If it is, a loss of weight occurs, and it is often found in the successful management of a case that after a while a loss of weight begins to show itself upon a continuance of the restricted diet. With freedom of the urine from sugar, it affords an indication that more or less restoration of assimilative power has taken place. A certain amount of carbohydrate can now be disposed of, and it happens, as experience shows, that if it is not given its want is manifested by the setting in of loss of weight. For a system of dieting to be rationally conducted it requires to be shaped to the requirements of each particular case. Time does not permit of my saying more to you upon this matter here, but I have entered fully into it in my recently published work on "The Physiology of the Carbohydrates; their application as Food and relation to Diabetes."

Under the view I have placed before you there is nothing mysterious or inscrutable about the nature of diabetes. The whole thing lies in a nutshell. Carbohydrate matter ought to be disposed of in such a manner as to be prevented reaching the general circulation as sugar. If not so disposed of it simply passes through the system in an unutilised state and is eliminated as waste material with the urine. The natural disposal of carbohydrate is effected by protoplasmic assimilative action. Persons have hitherto devoted their attention to the effect of ferment action upon the carbohydrates; but this means, looked at in relation to the matter before us, giving attention in the wrong direction. Ferment action prepares for application by protoplasmic action; but it does not in itself in a direct manner lead to application. It is protoplasmic action, therefore, which requires to be studied in connexion with the question of the disposal of carbohydrate matter in the system.

WHY SHOULD PROTOPLASM FAIL TO PERFORM ITS PROPER RÔLE?

Why should protoplasm fail to exercise the power belonging to it of synthesising the carbohydrate into proteid, transforming it into fat, and transmuting it down to glycogen? This is the next point which presents itself for consideration. I do not think it depends upon the protoplasm itself. It is a property of protoplasm, whether it belongs to the animal or vegetable kingdom, whether it exists in complex or simple organisms, to possess and exercise the power of producing the effects I have referred to, and I do not think the failure of action can be assigned intrinsically to the protoplasm, but that it is due to the conditions under which the protoplasm is placed. I, further, cannot help thinking—and I have thought so for years,—upon the strength of all I know in connexion with diabetes, that the exercise of protoplasmic power is dependent upon the existence of a proper condition of the blood in relation to the amount of oxygen present. The condition of the blood in this respect is influenced by that of the bloodvessels, and the bloodvessels, as we know, are under the control of nerve influence. We are thus carried to the nervous system for the source of the alteration of the blood which, I think, interferes with the proper exercise of protoplasmic power.

From evidence of a varied character adducible, a super-oxygenated condition of the blood may be said to lead to the production of saccharine urine. It seems to interfere through its influence on protoplasmic action with the passage of carbohydrate matter in its proper direction and to favour its passage in the direction of glucose. With dilated arterioles, from a paralysing influence derived from the nervous system, the blood traverses the capillaries in such a manner as not to become properly de-arterialised, thus establishing a super-oxygenated state. As I have said, evidence is adducible that with the occurrence of a super-oxygenated state of the blood saccharine urine is producible.

Paralysed arterioles of the chylo-poietic viscera will lead to an alteration of the condition of the blood going to the liver in the portal vein. There are some cases of diabetes where the fault is limited to association with assimilative action. In these, sugar disappears from the urine when a restricted diet is followed. In others, no amount of restriction of diet will remove the sugar from the urine. Not only is assimilative action here at fault, but a cleavage of sugar from the proteid of the tissues may be looked upon as occurring. Possibly a ferment becomes developed in the blood and produces the effect, for the change is of a nature to be produced in this way. In the diabetes resulting from the administration of phloridzin, a principle obtainable from the bark of the stem and roots of the cherry tree, evidence points to the sugar, certainly in part, being derived from the tissues, and I see no other explanation than that the effect is attributable to ferment action.

And now, Mr. President and Gentlemen, the hour informs me that my task is finished. I much appreciate the patient attention which has been given to these lectures. You all know the subject is one to which I have devoted a life's work. I have confidence, as far as confidence can exist, in what I have placed before you standing in accord with truth. It now remains, however, for the minds of others to be brought to bear upon the matter. Whatever the issue, I can truly say, as one on the College Roll, that I have used my utmost endeavours to carry out the exhortation to the Fellows of the College of our illustrious predecessor, Harvey, "to search and follow out the secrets of nature by way of experiment."

THE IMPROBABILITY OF A PARASITIC ORIGIN OF MALIGNANT DISEASE.

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IN February, 1882, I read a paper on a subject that until then had escaped attention—namely, the fact that malignant disease not infrequently follows with very considerable rapidity an injury such as a fracture or a severe bruise. I called this event, or sequence of events, "acute traumatic malignancy," and took occasion to foreshadow certain views which I more fully developed in a paper read in March, 1884, before the Pathological Society. Repugnant as I am to repetitions, yet it is necessary that those views be again formulated by short quotations from the latter paper. "The distinctions between carcinoma and sarcoma are not generic, but are merely sufficient to constitute two species of one genus which includes both—viz., malignant growth." "When sarcomata were first formed into a distinct group it was asserted of them that they are encapsuled, non-infiltrating, that they do not affect neighbouring lymphatic glands; but being developed from the walls of bloodvessels only infect the system by way of the blood." "These doctrines are, however, untenable. Sarcoma is occasionally without a capsule or often possesses only a very imperfect one; it is, whether encapsuled or not, always infiltrating. It grows from intervascular spaces, not from the walls of vessels,

and it very frequently, as in the case shown, affects the lymphatics." "The cachexia following sarcoma is indistinguishable from that produced by carcinoma." The view that the malignancy of both neoplasms is identical and that such quality must be regarded as a pathological entity was hardly well received at that time, but it is now in the writings of pathologists tacitly, if not in express words, admitted. In the ensuing remarks, therefore, all tumours possessing that special quality will be considered as a genus, the various arrangements, shape, and parentage of cells serving only to mark species or classes. Tumours which are clinically malignant are distinguished by their richness in cells, packed together closely—i.e., separated by very little and generally imperfect intercellular tissue; or, to put it in a form which more nearly, to my mind, represents the truth, such tumours are composed of cells which have entirely, or in very great part, merged all other functions in that of reproduction, and this, therefore, is excessive. Yet this is only an effect; the cause or causes calling forth this superabundant cell reproduction is and has been for a very long time the object of intense investigation. Stimulated by discoveries as to a microbic origin of many specific diseases, especially by Koch's success in cultivating a tubercle bacillus, a great many pathologists all over the world concluded on some such origin of carcinoma. Sir James Paget's Morton Lecture (1887), of which I must say more presently, greatly abetted this view, showing as it did a strong leaning to, nay, a conviction in its favour. Thus during about eight years research has been chiefly led in this direction, and has been carried along three lines—clinical observation, experiment, and microscopic investigation. I propose in this first paper to examine the clinico-pathological deductions upon which the prevalent opinions regarding the parasitic origin of cancer have been founded, or at least by which they have been supported.

With all the deference and respect which are due to his great name, I cannot but think that the first Morton lecturer has fallen into a fallacy by over-estimating the likeness to cancer of certain specific diseases and by under-estimating their differences. He names these diseases as "syphilis, tubercle, glanders, leprosy, actinomycosis," and points out some undoubted similarities which, however, seem pressed rather far. We judge, he says, of certain fevers, in which as yet no microbe has been discovered, that nevertheless they are of microbic origin, because they are so like one or two other kinds of fever in which bacteria have been found; therefore we ought to judge cancer to be so because of its resemblance in some points to the above-named diseases. But the one great factor upon which above all others we found our deduction of its origin is the infectious,[1] often also the inoculable, nature of the fever or specific disease. Sir James Paget dismisses this non-infectious and non-inoculable quality of malignancy with the simple words, "but these are negatives." Yet surely a stronger "No" would be difficult to pronounce. It is this one fact—viz., the contagious, infectious, epidemic, or inoculable quality of some fevers and certain diseases—which leads to the conclusion that they are the result of bacillar, parasitic, or microbic origin; surely, then, the absence of this special quality far outweighs the presence of certain more or less indistinct resemblances. It is impossible to conceive any disease more uncommunicable than malignancy. To take at present mere clinical evidence (the experimental will come hereafter) it may be asserted that cancer has been known for at least 2500 years. During that period hundreds of thousands of operations have been performed, and doubtless many accidental wounds inflicted; many nurses with sores on their hands have smeared them in cancerous discharges; many men have had connexion with women who had (knowing it or not) cancer of the uterus. In all those years not a single instance of contracting the complaint has been reported.

I now put together as illustrating and completing each other certain clinical facts. Cancer is sometimes in the same patient acquired in some part previously healthy by mere prolonged contact with a carcinomatous tumour; it may thus be carried from one lip or from one labium pudendæ to the other, or transference may be effected along a continuity of surface, as when in visceral cancer nodules of the same disease are found scattered about the peritoneum or more commonly collected on prominent folds or in recesses of that membrane. Secondary (sometimes falsely called metastatic) growths form in the lymphatic system, often also in more distant and less evidently connected parts, frequently in the liver after cancer of the rectum. These contact, continuity, and secondary nodules have the same micro-anatomy as the primary growth, and some writers have attempted to deduce from that fact a proof of microbic origin. Yet the only deduction to be derived from this similarity leads in a directly contrary direction. For it is readily conceivable that a cell of squamous-celled, of round-celled, or of melanotic cancer transferred to another part of the body by lymph or blood-stream would in that new place grow into a tumour histologically like its progenitor; but it is impossible to conceive that a parasite from any one of these deposited elsewhere must produce, if anything, a cancer like its original habitat unless we be prepared to assume that each form of carcinoma is due to a special genus of parasite which can produce that particular kind, and no other kind, of neoplasm. Let us also consider how very easily epithelial cells take root and grow on any but very unfitting soil. I, like other operators, have again and again transferred large pieces of sterilised epidermis to fresh wounds; every surgeon has practised skin grafting: for the former a reliable nidus is the surface of a perfectly fresh wound, for the latter an ulcer with not too spongy granulations. If, then, an ulcerating cancer lie in direct contact with a healthy skin surface, that surface soon becomes irritated, inflamed, and loses its epidermis; by-and-bye a cancerous epithelial cell adheres there and grows.[2] The same transference, however, happens in other epithelial growths and conditions, as, for instance, in epithelial warts; also in suppurations—an ulcer of the gum very often calls forth a like condition on that part of the cheek which lies immediately opposite to it. Common skin warts, such as are so frequent on children's hands, are often promulgated from the inner side of one finger to that of another. If a hydatid bursts into the peritoneum, its booklets and small daughter cysts are not, as a rule, scattered broadcast over the membrane, but are caught and retained in precisely the same places as those which are subject to what I have called continuity nodules. This shows that whatever carries the cancer are also masses—small, it is true, but large enough to be retained by projections or hollows, a quality hardly to be predicated of almost ultra-microscopic living atoms. Moreover, it tends to show that the things carrying the disease are passively subject to the laws of gravity, for they fall to the lowest parts of the cavity, as do all substances which have no power of independent motion, such as a parasite must have in order to infect anything—i.e., in order to penetrate into an epithelial cell or, further still, into its nucleus.

All these points, then—the transference by contact, by continuity of surface, by blood or lymph stream, and especially the fact that in all these cases the progeny is anatomically like the progenitor[3]—all these phenomena, which have been so much used in order to prop the microbic theory, are, in fact, quite adverse to such hypothesis; in other words, cancer and sarcoma, whatever their origin may be, are carried from place to place by cells or by nuclei detached from the primary growth. In connexion with this part of my subject, too, I must point to what appears to me to be another false analogy in the writings of the upholders of the supposititious cancer parasite. It would, however, be well to begin by saying that I yield to none in the high respect which I entertain for the most careful work of Messrs. Shattock and Ballance, as also for the honest, straightforward manner in which they have reported their results; but they lie open to the observation that even before commencing their work they were convinced of the parasitic theory—their labours have all been aimed at furnishing its proof, they have been undertaken and carried on with a bias. Especially is this bias remarkable in the analogies they draw between tubercle and malignancy. They say,[4] "What is true of tubercle is almost certainly true of cancer," but this, with all deference, is not so. A bacillus, specific of tubercle, has been found and cultivated. Tubercle has often been successfully inoculated.

[1] The reader is particularly requested to bear in mind the difference between the above term and the word "infective"; the former means conveyance of disease from one person to another, the latter that some malady primarily local invades after a time other parts and then the whole body of the patient.

[2] We have seen that, though this takes place from one part to another of the cancerous patient, such transference never occurs from a cancerous person to a healthy one; this will be further elucidated in the sequel.

[3] I suppose this to be what is meant by "spermatic influence" a term which has always struck me as peculiarly infelicitous.

[4] Transactions of the Pathological Society, vol. xxxviii., p. 417.

Tubercle has been traced to ingestion of milk furnished by tuberculous cows. The eating of tuberculous meat has more than once been followed by infection of the eater. The two first propositions have already been shown to be untrue of cancer. The third proposition in no way applies to cancer. As an instance: In the early part of 1876 I was asked to see a patient, and diagnosed scirrhus of the right breast. She was about five months and a half with child—her first pregnancy. Operation at that time was declined; in due course she bore a healthy child, which she suckled from both breasts. After about five months the supply, having been for some time insufficient, almost entirely ceased. I was called in again, not having seen her in the interval. The scirrhus had not greatly increased in size, but there were two enlarged glands in the axilla. I removed the breast and cleared out the axilla; she made a good recovery. The tumour was found to be a very hard scirrhus with a red point of softening in the centre. At the end of 1891 this patient died from broncho-pneumonia following influenza. The infant, who was suckled from a cancerous mamma, was strong and healthy. I see her, now about seventeen years and a half old (not as a patient), from time to time, and never in my life saw a stronger and heartier looking girl. As to the fourth proposition, animals, especially rats, who are of all quadrupeds particularly prone to cancer, have again and again been fed with lumps of scirrhus, the result being uniformly negative. Further, as to the "constitutional origin" of cancer without local manifestation and its comparison with general tuberculosis the supposed analogy does not hold. There is in malignancy nothing comparable to that condition called "scrofula," "strumous diathesis," or "constitutional tendency," which so often enables us to predict imminent tuberculosis; there is none of that anæmic failing of the vital powers so often immediately precedent of such attack. Again, is there such a thing as general or systemic malignancy without local manifestation? It is to be supposed that everyone has seen in the post-mortem room, as I have not infrequently done, in the medulla or cancelli of bones, in the retro-pleural or retro-peritoneal spaces, malignant tumours so deeply situated as to be undiscoverable and unsuspected during life. If in such case malignant cachexia with multiple tumours had destroyed life, shall the morbid anatomist be misled into concluding that the case is one of general or systemic "carcinomatosis" without primary local manifestation?

Lastly, must we conclude from the fact that bacilli form from their own excreta or from their reactions on the fluids of our systems a poisonous compound that infects the blood—must we conclude from this fact that malignant cachexia is necessarily produced by the same or analogous agency? The late Mr. Marshall was wrong in saying in his Morton Lecture that carcinoma and sarcoma are acid in their reaction. A freshly excised malignant tumour, or, still more strikingly, such a tumour incised for diagnostic purposes before removal, is decidedly alkaline. The acid reaction never, in my experience, appears until after three—more commonly after five—hours. There are between malignant cachexia and the toxic effect of bacteria many points of difference which are plain to careful observation, but hardly amenable to verbal description. The odour of a newly incised scirrhus or round-celled sarcoma is that of a cadaver of from four to six hours' demise, its alkaline reaction, the numerous degenerations microscopically observable, the high probability (to say the least) that degeneration is not the only condition, but that the decease of many cells—an interstitial death of cell tissue—must constantly be taking place: all these point to the same conclusion, as does the difference of symptoms—namely, that malignant cachexia is a slow poisoning by a peculiar form of poison evolved not by the constantly reproduced, but by the continually dying, cells of the malignant tumour.

(To be continued.)

THE Royal British Nurses' Association announce their first course of educational lectures for the coming autumn. This comprises five subjects, each to be treated by an experienced lecturer, as follows: Elementary Anatomy, Mr. W. J. Walsham, F.R.C.S.; Physiology, Dr. A. Schofield; Hygiene, Dr. Louis Parkes; Practical Nursing, Miss Isla Stewart, Matron of St. Bartholomew's Hospital; Domestic Economy and Ward Management, Miss de Pledge, Matron of Chelsea Infirmary. Particulars as to fees, dates, hours, &c., can be obtained of the Secretary, 17, Old Cavendish-street, W.

NEUROLOGICAL FRAGMENTS.

BY J. HUGHLINGS JACKSON, M.D. ST. AND., F.R.S.,
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No. X.

ON SLIGHT AND SEVERE CEREBRAL PAROXYSMS (EPILEPTIC ATTACKS) WITH AUDITORY WARNING; SLIGHT PAROXYSMS WITH DEAFNESS AND THE SPECIAL IMPERCEPTION CALLED "WORD-BLINDNESS"; SPECTRAL WORDS (AUDITORY); INABILITY TO SPEAK AND TO WRITE.

IN a paper published in *Brain* in July, 1888, "On a Particular Variety of Epilepsy ('Intellectual Aura')," I remarked (p. 191), "There is, I am convinced, in or after certain paroxysms of epilepsy temporary 'word-blindness'"; certainly in one patient of mine, who had a "warning" by noise. I could not make out that this patient was at the same time "word-deaf," but thought his temporary deafness was ordinary deafness. Still there may have been "word-deafness." In this note I give details of this case. I have in the title of this note used the term "cerebral paroxysm" as well as the term "epilepsy." We have not only to try to determine how far a patient's paroxysms approach or reach the type epilepsy, but also how they are departures from normal states. The term "epilepsy" is time honoured, and thus it often seems to be taken as a satisfactory statement of a case to say that it is one of epilepsy with this or that warning—as if epilepsy were some entity with different warnings in different patients. I submit that it is well also to consider that the warning in any paroxysm signifies the seat of a discharging lesion, that the warning is in that sense localising. Whilst, on the study of paroxysms by type, we may speak of some cases of epilepsy beginning by warnings of smell, others by warnings of colour, and others by warnings of noise, we should also recognise that there are in the cases instanced three varieties of cerebral paroxysms—one depending on a discharging lesion of a cortical centre for smell, another on such a lesion of a cortical centre for vision, and the third on such a lesion of a cortical centre for hearing. In other words, we should study the epilepsy, or cerebral paroxysm, of each patient on its own merits. To prevent misunderstanding I will use both the term "epilepsy" and the term "cerebral paroxysm."

In the case related in this note there was, I submit, a discharging lesion of some part of the auditory centre of Ferrier and of that part alone (left half of the brain, I suppose). The discharge presumably spread from this fulminating point to normal cells—not necessarily to those morphologically nearest, but rather to those "physiologically nearest" (I mean to those normal cells which are united to the highly unstable cells of the discharging lesion by lines of least resistance). Those who have pondered over diagrams intended to illustrate the cerebral mechanism of speaking, reading, and writing, and of reception of the speech of others will see what is here meant. Probably in this case several of the phenomena mentioned were the after-effects of the discharge, were correlative with exhaustion of cells discharged in the paroxysm, and were post paroxysmal, post epileptic. There very likely occur cerebral paroxysms with an auditory warning without the special imperceptions word-deafness or word-blindness, and without inability to speak; but more careful inquiries have to be made in such cases. Much, no doubt, depends on whether the discharging lesion is of a part of the right or left half of the brain. Cerebral paroxysms with the phenomena mentioned have occurred in one case under my observation without any sort of auditory warning.

An intelligent man twenty-one years of age consulted me in March, 1882 for epileptic attacks; he had, he told me, the first at Christmas, 1881. This fit began by a noise, auditory warning; he became deaf; he could see people speaking to him (their lips moving), but could not hear them; he ran to the door and fell on his face; he became unconscious and bit his tongue: his mother said he foamed at the mouth and "struggled"; he was, or was partly, conscious again in about ten minutes. I did not hear of any actions after this fit. He had had ten or twelve severe seizures since, in some of which he bit his tongue. The fit at Christmas,

1881, was not his first attack, but only his first severe attack. He had had what he called "symptoms," which were really slight epileptic fits. Once, a few nights before what he called his first fit, he "walked in his sleep," as he expressed it. He remembers having the "beating noise" (auditory warning) and was "half sensible," as he could see his brother in bed. He walked from his own to his brother's bed and shifted his pillow. These actions were, no doubt, judging by the sequel, evidence of a prior epileptic attack and not ordinary somnambulism; this quasi-somnambulism occurred, I suppose, after a slight fit. In the daytime (both before and after the first severe attack) he would have the slight fits which he called "symptoms." He had three or four of them in a day. In these slight seizures he heard strange noises—auditory warning,—became deaf, and was not able to speak; the duration was three or four minutes; he did not become unconscious in these slight attacks and his averment was that he was not even defectively conscious in them. The "strange noise" was like a beating, "as if time were being marked"; it was rather loud, seemed to be in both ears and in his head; there were no spectral auditory words with or after the noise (there were later, *vide infra*). I particularly wish to draw attention to the patient's remark that every time the noise came—that is, in every attack—he had the feeling that he had heard the noise before and "knew what was coming next," as if he remembered the same things (sounds) as if "they had happened before." In the intervals of the paroxysms there was no deafness. He continued to have both slight and severe attacks. I now give facts from notes taken Aug. 21st, 1883; this is the most important part of the record. In the severe fits he had now no warning. I will speak only of his slight seizures; they would come on three or four times a day. In these he would be "half unconscious" (defect of consciousness).

Auditory symptoms.—1. Crude sensation: There was the noise, but this was not so bad as it used to be. The noise, auditory warning, is a crude sensation; next for a vastly more elaborate psychical state. 2. Spectral auditory words (words as if spoken to him): He now heard words in his attacks—that is to say, there was what is called "hearing voices,"[1] which, properly, was hearing words as if spoken to him—auditory spectral words. His hearing at the time was at least defective; he could not hear words, those, I now mean, actually spoken by bystanders, although he could, so to put it, see people speaking—that is, see their lips moving. He had the feeling that the words, which I call spectral, were remembered (*vide supra*). My belief was, but I am not now sure, that the deafness was ordinary general deafness, and not solely the special imperception called "word-deafness." Of course there may have been word-deafness, and also deafness to all sorts of sounds. If he were deaf to everything we could not tell whether there was word-deafness or not; if we could suppose that there was word-deafness it would, so to say, be merged in the general deafness. I never saw the patient again, and thus had no opportunity of reinvestigation on this matter. 3. Speech symptoms: He cannot speak, but makes some articulatory noise; he cannot think of the word he wants to speak. 4. Writing: He is a shorthand writer, and is writing most of the day. The slight seizures sometimes come on whilst he is writing; he goes on writing in a fashion when the fit is on, but really writes no words, makes no proper combinations of letters, does not write in the sense of expressing himself. 5. Reading: He can see letters well, but cannot read. There was no general defect of sight, but that special imperception called "word-blindness." He carried a newspaper about with him to test himself; he would, if taken whilst reading, go on in the sense of seeing the words and following the lines, but did not know what it was about.[2]

It may be said that this patient could not read on account of defect of consciousness. This would seem to be an explanation quite inapplicable in the case. I have[3] given some particulars of a patient's post-epileptic state; one thing in that case relevant to what I have just said is: "In, or as I suppose just after, an epileptic fit, and when yet 'unconscious,' this patient might read a page correctly and yet know nothing of it afterwards; for example, he once read a parish notice." I got no account of any warning, and thus I do not know what kind of cerebral paroxysm (epilepsy) it was. This patient, as he read the notice, was not word-blind after his paroxysms, but was "unconscious," or, to speak carefully, remembered nothing of his post-epileptic doings on recovery. To return to the case narrated in the present note. I had asked the patient to write down for me his spectral words. He brought a paper with the following combinations of letters written in pencil—"uabl," "clabylun," "Abyotm," "hudj." They are not words at all; he could not in his attacks write anything in the sense of expressing himself; the value of these combinations of letters is that they are at least curious evidence that he was not unconscious even if he were defectively conscious in his slight seizures.

[1] In THE LANCET, March 11th, 1876, I gave brief particulars of the case of a young man subject to epileptic attacks starting with a warning of noise in (referred to) the left ear, with turning of the head to the left. I omitted to mention that this patient had spectral words in his paroxysms—"curious things" would rush through his head and often the word "boots."

[2] Of course, his "seeing the words" was his seeing certain small shapes or drawings on paper. Chinese print, which I can see but not read, seems to me to be only a series of different elaborate marks. It would be interesting to know if in such cases as that under consideration the patients can recognise handwriting during the temporary word-blindness; some permanently aphasic patients, who have become unable to read, know from whom letters come by the style of the writing on the envelope.

[3] Brit. Med. Jour., Feb. 1st, 1879, and Medical Times and Gazette, Feb. 8th, 1879

LITHOLAPAXY IN MALE CHILDREN AND BOYS.

BY D. F. KEEGAN, F.R.C.S. ENG.

IN THE LANCET of Oct. 4th, 1890, I recorded a series of 125 litholapaxies performed on male children and boys under fifteen years of age at the Indore Hospital, Central India, between December, 1881, and April, 1890. In this series there were four deaths, attributable to advanced kidney disease and in no way due to any accident or failure in the performance of the operation. In THE LANCET of May 27th, 1893, I recorded an additional series of fifty litholapaxies performed on boys at Indore during the twelve months ending Nov. 3rd, 1892. In this series there were no deaths. On the present occasion I place before the readers of THE LANCET a third and last series of sixty-four litholapaxies performed on boys at Indore during the seventeen months ending March 26th, 1894. In this last series there was one death, the particulars of which will be related in the sequel. During the seventeen months under review three young girls and sixty-eight boys were admitted into the Indore Hospital suffering from stone in the bladder. The girls' calculi were extracted by litholapaxy, and in each case recovery was most rapid and in every way satisfactory. On some future occasion I hope to have an opportunity of recording at some length the histories of all the cases of calculi in the bladder which I have treated in young girls and women by litholapaxy, and I would remark in passing that in no class of cases is the superiority of Bigelow's operation over all other methods of extracting a stone from the bladder more striking than in its application to calculi occurring in young girls and women. Sixty-four of the sixty-eight boys admitted into hospital were subjected to litholapaxy, and I have grouped in tabular form the main features of interest connected with each of these operations. In four cases I had recourse to a cutting operation; in three out of the four cases, finding that the stone lay partly in the bladder and partly in the prostatic urethra, I performed a lateral lithotomy, and in one case, in which I found it impossible to pass a staff into the bladder by reason of the damage done to the urethra by a previous perineal lithotomy unskilfully performed by an itinerant native practitioner, I extracted the stone through a supra-pubic cystotomy. This latter was an extremely difficult case to treat, inasmuch as I was unable to inject any fluid into the bladder, and the boy was unable to retain his urine for more than half an hour at a time. Under these circumstances I availed myself of an excellent method recommended by Professor N. Senn,[1] and performed the operation in two stages, removing a uric-acid calculus weighing seventy-eight grains. These four cutting operations did well. When I left India three months ago I had performed 239 litholapaxies in boys, with five deaths; and, as in all probability I shall have no further opportunities afforded me of treating boys for stone, it may be as well that the work done in this particular branch of operative surgery by a single operator should be placed permanently on record for statistical purposes. The relative mortality which follows supra-pubic lithotomy, lateral lithotomy, and litholapaxy in boys can only be gauged by means of

[1] The Medical News, July 1st, 1893.

TABLE SHOWING PARTICULARS OF SIXTY-FOUR LITHOLAPAXIES PERFORMED ON MALE CHILDREN AND BOYS AT THE INDORE HOSPITAL, CENTRAL INDIA, DURING SEVENTEEN MONTHS ENDING MARCH 26TH, 1894.
THIRD AND LAST SERIES.

Serial Number	Age.	Caste.	Date of operation.	Time occupied by operation, in minutes.	No. of lithotrite used.	No. of catheter used.	Number of times lithotrite was introduced.	Number of sittings.	Composition of stone.	Duration of disease, in months.	Weight of stone, in grains.	Number of days in hospital after operation.	Result.
176	4	M.	Nov. 11, 1892	17	5	7	2	1	Uric acid and oxalate of lime.	24	7	6	Successful.
177	4	H.	Dec. 1 ,,	68	5 and 7	7 and 8	9	1	Urate of ammonia.	12	85	5	,,
178	7	M.	Jan. 5, 1893	29	6	7, 8, 9	4	1	Oxalate of lime and uric acid.	24	121	3	,,
179	4	H.	Jan. 14 ,,	39	5	6 and 7	5	1½	Phosphate of lime and urate of ammonia.	2	32	7	,,
180	7	H.	Jan. 25 ,,	29	6	7 and 8	4	1½	Oxalate of lime and covering of phosphates.	4	80	4	,,
181	5	M.	Jan. 30 ,,	53	4 and 6	7 and 8	6	1½	Oxalate of lime and uric acid (mulberry).	24	60	4	,,
182	10	M.	Jan. 31 ,,	98	6, 7½, 8	8, 9, 10	10	1½	Phosphate of lime, oxalate of lime with uric acid nucleus.	60	564	3	,,
183	4½	M.	Feb. 2 ,,	13	4	8	2	1½	Oxalate of lime, uric acid and phosphates.	10	14	3	,,
184	8	H.	Feb. 7 ,,	42	4, 6, 7½	8 and 9	7	1	Phosphatic.	18	190	7	,,
185	13	H.	Feb. 11 ,,	90	6, 7½, 10½	12	13	1	Fawn-coloured uric acid, small quantity of phosphates and oxalate of lime.	36	551	8	,,
186	2½	H.	Feb. 21 ,,	54	4	7 and 8	6	1½	Phosphatic, with a thick covering of membrane.	18	35	2	,,
187	4½	H.	Feb. 23 ,,	28	4	7 and 8	5	1	Phosphate of lime with a small quantity of uric acid and oxalate of lime.	18	30	4	,,
188	6	H.	March 2 ,,	44	4 and 6	7 and 8	6	1½	Oxalate of lime and uric acid (mulberry).	36	41	5	,,
189	6	M.	March 3 ,,	18	4	7 and 8	2	1½	Oxalate of lime and uric acid (mulberry).	6	18	7	,,
190	14	H.	March 29 ,,	95	4 and 5	5 and 6	9	1	Phosphate of lime.	24	89	5	,,
191	9	H.	April 5 ,,	40	5, 6, 7, 8	8 and 10	8	1½	Oxalate of lime, uric acid, and some phosphates (mulberry).	48	144	3	,,
192	6	H.	April 11 ,,	32	7	8	3	1½	Uric acid, phosphate of lime, and phosphates.	36	41	4	,,
193	7	H.	April 17 ,,	19	6 and 7	10	3	1½	Uric acid, with nucleus of oxalate of lime.	12	78	5	,,
194	14	H.	May 1 ,,	98	6, 7, 10½	10 and 11	11	1	Phosphate of lime and uric acid.	84	287	4	,,
195	4	H.	May 8 ,,	11	4	7	2	1½	Uric acid, oxalate of lime and phosphate of lime.	6	4	4	,,
196	5½	H.	May 13 ,,	21	6	8 and 10	3	1	Oxalate of lime and urates.	48	71	6	,,
197	11	H.	May 16 ,,	77	6, 7, 7½, 8	8, 9, 10	13	1½	Oxalate of lime and uric acid, covering phosphate (mulberry).	42	200	2	,,
198	4	H.	May 18 ,,	26	4	7 and 8	3	1	Oxalate of lime and uric acid.	3	14	3	,,
199	3	H.	May 23 ,,	26	4	6 and 7	4	1	Oxalate of lime and uric acid.	4	26	1	,,
200	5	H.	May 31 ,,	21	5	7 and 8	4	1½	Phosphatic, with oxalate of lime nucleus.	24	82	4	,,
201	9	H.	June 6 ,,	58	6, 8, and 9	8 and 10	8	1½	Oxalate of lime and uric acid (mulberry).	12	240	3	,,
202	12	H.	July 4 ,,	150	6, 8, 9, 9½, 10, 10½	10 and 11	18	1½	Phosphate of lime and oxalate of lime.	48	703	5	,,
203	9	H.	July 19 ,,	78	4, 6, 8	7, 8, 9, 10	8	2½	Oxalate of lime and uric acid (mulberry).	30	198	2	,,
204	10	M.	July 27 ,,	48	4, 6, 7	8 and 10	8	1½	Urate of ammonia, phosphate of lime and mixed urates, and oxalate of lime.	12	116	10	,,
205	6	M.	July 28 ,,	48	4, 6, 8	8 and 9	5	1	Uric acid.	12	121	2	,,
206	4	H.	Aug. 9 ,,	40	4 and 6	7, 8, 9	7	1½	Phosphate of lime and urate of ammonia.	8	74	2	,,
207	5	H.	Aug. 14 ,,	22	4	6 and 7	2	1	Oxalate of lime and uric acid.	10	9	3	,,
208	6	H.	Aug. 21 ,,	16	4	7, 8, 9	3	1½	Oxalate of lime, urate of ammonia and phosphate of lime.	18	29	2	,,
209	12	H.	Aug. 30 ,,	48	6, 8, 9	10	7	1½	Uric acid, phosphates, and some oxalate of lime.	12	230	2	,,
210	5	M.	Sept. 3 ,,	6	4	7 and 8	2	1	Oxalate of lime and uric acid.	3	3	2	,,
211	5	M.	Sept. 7 ,,	18	4	7	2	1	Oxalate of lime and uric acid.	12	4	5	,,
212	8	H.	Sept. 13 ,,	69	4, 7, 8, 9½	8 and 10	12	1½	Phosphate and oxalate of lime and uric acid.	72	362	5	,,
213	7	H.	Sept. 18 ,,	14	6	7 and 8	2	1	Oxalate of lime and uric acid.	5	4	2	,,
214	3	H.	Sept. 22 ,,	10	4	7 and 8	2	1½	Oxalate of lime with uric acid nucleus.	12 days	1½	1	,,
215	9	H.	Sept. 23 ,,	48	4, 6, 8	8 and 10	9	1	Oxalate and phosphate of lime.	36	166	2	,,
216	3	H.	Oct. 5 ,,	12	4	5, 6, 7	3	1½	Urate of ammonia and oxalate of lime.	3	3	3	,,
217	10	H.	Nov. 21 ,,	94	4, 5, 7, 8	8 and 10	14	1½	Phosphate of lime, oxalate of lime, and uric acid.	60	384	5	,,
218	4	H.	Dec. 1 ,,	35	4	5, 6, 7, 8	6	1½	Phosphate of lime and earthy phosphates.	16	61	4	,,
219	8	H.	Dec. 20 ,,	32	4, 5, 7	7 and 8	5	1½	Oxalate of lime and uric acid (mulberry).	Unknown	84	3	,,
220	9	H.	Dec. 26 ,,	105	4, 5, 7, 7½	7, 8, 9	14	1½	Phosphate of lime and oxalate of lime.	36	440	7	,,
221	4½	M.	Dec. 29 ,,	22	5 and 7½	7, 8, 10	3	1	Phosphate of lime.	36	131	5	,,
222	5	H.	Jan. 1, 1894	8	4	7	1	1½	Oxalate of lime and urate of ammonia.	12	3	1	,,

Average weight of stone ... ... 122·54 grains.
,, stay in hospital after operation ... ... 4·04 days.
,, age of patients ... ... 6·75 years.
Rate of mortality ... ... 1·56 per cent.

TABLE SHOWING PARTICULARS OF SIXTY-FOUR LITHOLAPAXIES PERFORMED ON MALE CHILDREN AND BOYS AT THE ISDORE HOSPITAL, CENTRAL INDIA, DURING SEVENTEEN MONTHS ENDING MARCH 26TH, 1894.
THIRD AND LAST SERIES—(*Continued*).

Serial number.	Age.	Caste.	Date of operation.	Time occupied by operation in minutes.	No. of lithotrite used.	No. of catheter used.	Number of times lithotrite was introduced.	Number of sittings.	Composition of stone.	Duration of disease, in months.	Weight of stone, in grains.	Number of days in hospital after operation.	Result.
223	8	H.	Jan. 23, 1894	75	4, 5, 7	7 and 8	8	1½	Oxalate of lime and uric acid (mulberry).	36	95	2½	Successful.
224	5	H.	Jan. 28 ,,	23	4 and 7	7 and 8	4	1½	Oxalate of lime, uric acid, and phosphates.	24	44	3	,,
225	3	M.	Feb. 3 ,,	41	4 and 5	6, 7, 8	6	1½	Oxalate of lime, uric acid, and phosphates.	12	77	4	,,
226	3	H.	Feb. 4 ,,	14	4	7 and 8	3	1½	Oxalate of lime, uric acid, and urate of ammonia.	16 days.	6	1	,,
227	3	M.	Feb. 11 ,,	18	4	6 and 7	2	1	Uric acid and urate of ammonia.	9	23	4	,,
228	7	H.	Feb. 12 ,,	23	4	7 and 8	3	1	Urates and phosphates.	12	44	3	,,
229	7	H.	Feb. 17 ,,	15	4	8 and 10	3	1½	Principally phosphates of lime, and some urates.	24	39	3	,,
230	9	H.	Feb. 23 ,,	67	4, 5, 7	8 and 10	8	1	Oxalate of lime and phosphates.	24	91	6	,,
231	6	H.	Feb. 23 ,,	31	4	6	3	1½	Uric acid, oxalate of lime, and some phosphates.	21	28	6	,,
232	12	H.	Feb. 23 ,,	89	5, 7, 7½	8, 9, 10	12	1	Phosphates and urates.	24	332	5	,,
233	2	H.	Feb. 26 ,,	6	4	6	2	1	Uric acid.	15 days.	2	3	,,
234	7	H.	March 3 ,,	63	4	6, 7, 8	8	1	Oxalate of lime and uric acid.	30	98	3	,,
235	12	H.	March 5 ,,	55	7, 7½, 9½, 10	8 and 10	8	1	Phosphate of lime and urates.	60	302	5	,,
236	8	H.	March 5 ,,	55	5, 7½, 9½	8, 9, 10	8	1½	Earthy phosphates and phosphate of lime in small quantity.	24	200	7	,,
237	8	H.	March 8 ,,	55	4, 7½, 8	6, 7, 8	7	1½	Oxalate of lime and uric acid (mulberry).	36	184	7	Died.
238	6	H.	March 13 ,,	9	4	6, 7, 8	2	1	Oxalate of lime and uric acid.	2	4	7½	Successful.
239	5	H.	March 24 ,,	14	4	6, 7, 8	2	1½	Oxalate of lime, uric acid, and phosphates.	10	28	3	,,

Average weight of stone ... ... 122·54 grains.
,, stay in hospital after operation ... ... 4·04 days.
,, age of patients ... ... 6·75 years.
Rate of mortality ... ... 1·56 per cent.

statistics; and the profession is indebted to Mr. Gilbert Barling of Birmingham for a valuable paper[2] proving what had been surmised by many practical surgeons who have devoted much attention to the treatment of stone in boys—viz., that the rate of mortality of supra-pubic lithotomy in young males is much higher than that which follows lateral lithotomy and litholapaxy in this class of patients.

There are several cases of great interest in the table appended, and if space permitted I might enter into a detailed statement of many of them. There are, however, three or four to which I would like to draw attention. Notwithstanding the numerous cases reported by Freyer and myself of the successful removal of very large calculi from boys by Bigelow's method or litholapaxy, one continually comes across passages in the medical journals nowadays in which it is gravely stated that litholapaxy is only adapted to the treatment of *small* stones in boys. A glance at the accompanying table shows that it contains as many as seventeen cases in which the stone removed weighed over 150 grains, and any stone approaching three drachms in weight is, I consider, a large one in a boy. There are eight cases in the table in which the stone removed weighed over 300 grains, and I am tempted to relate at some length the particulars of serial number 202 as an example of what can be accomplished by well-made and trusty lithotrites judiciously employed.

A boy twelve years of age, a Rajput by caste, was admitted into the Indore Hospital on July 3rd, 1893, with symptoms of stone which had existed for four years. Next day, when placed under chloroform, I found that his urethra accommodated a No. 10½ lithotrite. I seized the stone readily, but could not get the blades to lock on it at first. Again and again the stone slipped out of the blades, but by chipping off little bits from the covering of the stone and by the exercise of much patience I eventually worked into the body of the calculus and broke it across. The stone felt like marble and the boy strained most violently, although fully under the influence of chloroform, during the first hour and a half of the operation. The operation lasted two hours and a half, and I seldom recollect a more difficult and trying litholapaxy. However, I did not leave a grain of stone in the bladder, and next day the débris, consisting of phosphate of lime and oxalate of lime, when dried, weighed 703 grains. On July 5th he complained much of pain in passing urine, and he also complained of pain when firm pressure was made over the region of the bladder and along the course of the urethra; but the urine was quite clear. On the 7th the pain over the bladder, the result of the spasmodic contraction of that viscus during the operation, was very trifling, and the urine remained still quite clear. On the 9th—viz., five days after the operation—he had no urinary symptoms of any kind and left the hospital cured. Contrast this boy's history subsequently to operation with what it would have been had I failed to crush the stone and had been forced to extract it either by a lateral lithotomy or by the high operation.

The next case to which I would draw attention is serial number 211. In this case I performed litholapaxy without giving chloroform.

A Mahomedan boy five years of age living in Mhow, the cantonment near Indore, came into hospital on Aug. 7th, 1893, with symptoms of stone which had existed for a year. Having placed the boy at once on the operating table with a view of verifying the diagnosis, I passed a small sound, but failed to detect a calculus. I then passed a No. 4 lithorite and at once struck the stone, and finding, to my surprise, that the boy did not resent the presence of the lithorite in the bladder I seized the stone and crushed it there and then. The urethra was narrow; I therefore continued to crush the stone until I had, as I thought, reduced it to fine powder. I then introduced a No. 7 evacuating catheter and removed nearly all the débris, but finding that some bits remained behind in the bladder I again introduced the No. 4 lithotrite and crushed the last remaining particles into very fine powder. No. 7 evacuating catheter was again introduced and the last particles disposed of. The operation lasted altogether eighteen minutes, and the boy stood the introduction and movement of the instruments in the bladder wonderfully well. The water in the

[2] Brit. Med. Jour., May 5th, 1894.

aspirator was never once tinged with blood. The stone when dried weighed four grains, and consisted of oxalate of lime and uric acid. His recovery was uninterrupted and the urine was never clouded after the operation. Although I had on former occasions crushed calculi in adult males without the use of an anæsthetic, this was the first case in which I performed a litholapaxy on a boy without the aid of chloroform.

The next case which I shall relate is a very interesting one. A Hindu boy aged nine years was submitted to litholapaxy on July 15th, 1893, in a province adjoining Central India, but owing to the hardness of the stone and lack of practical experience in using the lithotrite by the surgeon who attempted the operation, it was found impossible to complete it at one sitting. The surgeon was a firm believer in the advantages of litholapaxy as applied to boys; and, instead of performing a lateral lithotomy on finding he was unable to crush the stone, he forwarded the case to Indore. The boy came under my care on July 19th, and, being at once placed under chloroform, I first of all passed in a No. 7 evacuating catheter and washed out the bladder very thoroughly with water at blood heat. On passing in the evacuating catheter it grated against some particles of débris lying in the membranous portion of the urethra. The urine was turbid and ammoniacal. Introducing a No. 6 lithotrite, I at once picked up a piece of stone which had been broken off the main calculus on July 5th, and disposed of it. The body of the stone was crushed by a No. 8 lithotrite. The nucleus I found extremely hard, but it eventually yielded to the No. 8 lithotrite. I was told that about fifteen grains of débris had been extracted from the bladder on the 15th inst., and doubtless the stone had in some measure become softened in the bladder between July 15th and 19th, and thus the process of crushing was rendered more easy for me than it was for the surgeon who attempted the operation in the first instance. A considerable amount of time was spent towards the close of the operation in extracting the particles of stone which had got stuck in the membranous portion of the urethra, and in clearing away any pieces which had become attached to the walls of the bladder and had been kept there by shreds of mucus. The operation lasted ninety-eight minutes and the débris, when dry next day, weighed 198 grains, and consisted of oxalate of lime and uric acid. The boy was accompanied by a hospital assistant and his mother on the journey to Indore, and finding his condition satisfactory after two days' stay in hospital I yielded to the entreaties of his mother and allowed him to return to the neighbouring province whence he had come. He bore the return railway journey extremely well, and having remained under the care of the surgeon who sent him to me, he was discharged from hospital perfectly well on the eighth day succeeding the second operation. There is much food for reflection in the history of this case. Is it wise for a surgeon who has not had many opportunities of rendering himself practically familiar with the use of the lithotrite to attempt to crush a large and very hard calculus in the bladder of a young boy? I think I can safely answer this question in the negative, and I would strongly advise him to try his 'prentice hand on small calculi in boys before proceeding to attack hard and large ones in these young patients. Another question suggests itself, What is the best course to pursue when a beginner at litholapaxy, although amply supplied with all necessary instruments, finds it impossible to crush a hard stone in a boy's bladder at one sitting? In my opinion he should at once perform a lateral lithotomy, unless, perchance, a skilled hand at crushing a stone is present to complete the operation. Although the case which I have just related eventually did well, nevertheless it must be admitted that the boy was exposed to many dangers, such as convulsions, retention of urine, and cystitis, between July 15th and 19th. And still a third question. Suppose a skilled litholapaxist attacks a very hard stone in a boy's bladder and fails to crush it at one sitting, by reason of his not having at hand a sufficiently powerful lithotrite, what should he do under such circumstances? If he has reason to believe that by the morrow he can procure a suitable lithotrite he may, in my opinion, content himself with emptying the bladder of all débris by a thorough use of the aspirator and by seeing that no particles of stone remain in the urethra, and postpone the second sitting to the next day. If, however, he has no reason to believe that he can procure a suitable lithotrite for the case in hand, then he should at once proceed to a lateral lithotomy.

The last case which I shall relate is the fatal one and is briefly as follows. A Hindu boy eight years of age was admitted into the Indore Hospital on March 7th, 1894, with symptoms of stone, which had existed for three years. Next day I crushed without any difficulty a very hard mulberry calculus weighing 184 grains. The meatus urethræ was very small, and I was obliged to slit it up to permit the passing of a No. 8 lithotrite, by means of which I cracked the stone across. The operation lasted fifty-five minutes. The following are the notes of the case after operation. "March 9th: The morning temperature is 99·4° F. The patient experiences no pain over the region of the bladder or along the course of the urethra; he has some pain at the meatus, which was slit up; the boy cries and pulls at the penis when micturating; the urine is clear; the evening temperature is 101·6°.—10th: The morning temperature is 98·6°. The boy does not cry or pull at the penis when micturating; the evening temperature is 104·4°.—11th: The morning temperature is 100·2°; the urine is clear; the evening temperature is 104°.—13th: The morning temperature is 101·6°; the urine is clear; he complains of pain in the abdomen; he has a pained expression.—15th: The abdomen is tympanitic. The evening temperature is 102°.—16th: The morning temperature is 102°; the bowels have been moved four times. He complains of pain all over the body." The patient died on the 17th. Post-mortem examination revealed a low form of pyæmic inflammation of the peritoneum. The peritoneal cavity contained a large quantity of pus. In both pleural cavities a considerable quantity of pus was found. The bladder and urethra were quite healthy, and there was no inflammatory deposit about the bladder. On opening the bladder the mucous membrane was quite healthy and no particle of stone was found therein. The ureters were not dilated. The left kidney was smaller than the right and was granular. The intestines were pale and the heart and liver were healthy. I am at a loss to account for the low form of peritonitis and empyema. The instruments employed in the operation were scrupulously clean. The post-mortem appearances showed that the inflammation had not begun in the bladder or its ligaments. It is true that I had been obliged to slit up the meatus. The boy when admitted into hospital was in a very weak and wretched condition, but he was no weaker to all appearances than scores of boys on whom I had successfully performed litholapaxy. I was much distressed at the unfortunate termination of the case. Until this death occurred in my practice I had had the good fortune of having performed 116 consecutive successful litholapaxies in boys.

I have now placed on record, and in tabular form, the particulars connected with 239 litholapaxies performed on male children and boys with my own hands, and, reviewing the statistics of these operations, I find that the average weight of stone removed by each litholapaxy was 98·44 grains, the average number of days spent in hospital after operation was 4·16, the average age of boys operated on was 6·4 years, and the rate of mortality was 2·09 per cent. I think I may safely state that I have at last placed the operation of litholapaxy, as applied to the treatment of stone occurring among boys in India, on a sure and solid basis. Year by year this operation will secure more adherents in India, and should this be so it will mean a reduction in the rate of mortality following stone operations on Indian boys of something between 3 and 4 per cent. When one bears in mind that every year in India upwards of 2000 boys between the ages of two and sixteen years undergo operations for stone in the bladder it is a simple sum in arithmetic to calculate the saving of life which will result during the next decade should litholapaxy become the operation of selection when dealing with stone in young males. In this connexion I should like to mention that in March of the present year I was favoured with a communication from Brigade-Surgeon-Lieutenant-Colonel J. Forbes Keith, late Civil Surgeon of Hyderabad in Sindh, giving some statistics of the work done by him in crushing calculi among the native population of that province. He writes: "My last year's work was 601 cases of lithotrity, 46 of which were perineal, with 4 deaths. My last death was on Nov. 15th, at case No. 1135 (urethral), and I am at present at case No. 1276 (urethral). Amongst the perineal lithotrities of last year I had fortunately no deaths. In your extension—viz., amongst children and boys under fifteen years—I have at present 698 with 4 deaths, and the number I am at without a death is 427, all operated on in succession without a single untoward occurrence that I can remember." What a happy surgical hunting ground Hyderabad in Sindh must be for the man who knows how to work a lithotrite properly. Now, no matter what opinions

may be held about "the tolerance of the Indian bladder" in old men, it will, I think, be freely admitted by all competent judges that the bladder of an Indian boy is no more tolerant of operative interference than that of a European lad of the same age. Rather, I should say that the advantage lay on the side of the European lad, who, as a rule, is stronger than his Indian brother of the same age and whose constitution is not undermined by malarial cachexy. Brigade-Surgeon-Lieutenant-Colonel Forbes Keith, therefore, may well be congratulated on the brilliant achievement of having performed 698 litholapaxies in boys with a mortality of only 4. My humble efforts in this department of operative surgery pale beside his, but I have the satisfaction of feeling that had I not started litholapaxy in boys at Indore that the brilliant results at Hyderabad, Sindh, would most probably have never been achieved. It will, perhaps, do no harm to bear in mind that Brigade-Surgeon-Lieutenant-Colonel Forbes Keith in the course of a few years has crushed more calculi in the bladder than any living surgeon has done during the whole of his career. Now, although I feel perfectly convinced that litholapaxy will be the operation of the future for the vast majority of calculi occurring among boys in India, and notwithstanding the fact that I have for many years persistently advocated its adoption among my professional brethren practising in India, I nevertheless feel some hesitation in pressing its claims on the attention of general surgeons in Great Britain. And why? Because to render himself practically familiar with the use of the lithotrite a surgeon must be afforded frequently repeated opportunities of dealing with cases of stone in the bladder, and as such opportunities occur only at rare intervals to the great majority of surgeons in Great Britain a lifetime may be passed without ever acquiring a practical familiarity with the lithotrite. How to work a lithotrite in the bladder with precision and safety to one's patient is only to be acquired by constant practice; but, like skating and swimming, the art once learned can never be altogether forgotten. To learn the art quickly one must be provided with patients suffering from stone in the bladder in rapid succession. In many provinces of India there is no lack of such patients, whilst in Europe, as a rule, it is only the specialist in urinary diseases who is constantly being afforded opportunities of working with the lithotrite; and hence, I think, it will be safer for surgeons in England, whose opportunities of rendering themselves practically familiar with the lithotrite are few and far between, to trust to the knife and staff and to perform a lateral lithotomy when a boy with a stone of moderate size in his bladder is brought to them for treatment. In conclusion, I would remark that among boys the operation of supra-pubic lithotomy should be restricted to calculi so large that they cannot be removed with safety through the perineum and to those very rare cases in which a staff cannot be passed into the bladder.

Maidenhead, Berks.

CLOSURE OF THE JAWS FROM INJURY AND ARTHRITIC INFLAMMATION.

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THE number of recorded cases of successful operations for closure of the jaws from injury or disease of the temporo-maxillary articulation is not great. In the following list I have given an abstract of all the cases I can find.

1. A case is recorded by the late Mr. Francis Mason.[1] The patient was a young woman aged twenty-nine. At the age of thirteen she had an attack of scarlet fever, and an abscess formed in the right temporo-maxillary region, resulting in fixation of the joint. At the time of the operation the jaws were so tightly closed that a piece of writing paper could not be inserted between the teeth. Mr. Mason first endeavoured under ether to force open the jaws, but failed. He then made an incision two inches long under the body of the jaw on the right side. A narrow saw was then applied in the space between the first and second bicuspid, and the bone divided with the help of the bone forceps. A piece of bone half an inch long was removed. The result was that the patient could open the mouth about three-quarters of an inch, and she could masticate her food well.

[1] Medical Times and Gazette, vol. ii., 1876.

2. There are two cases recorded by Mr. Spanton;[2] one of them being the case I am about to relate. He operated on her in April, 1880, and I transcribe his own description of the operation. "I passed a very narrow tenotomy knife into the temporo-maxillary joint on each side, immediately in front of the temporal artery, and then passed it freely round the condyle of the inferior maxilla as far as I deemed prudent, dividing completely the external lateral ligament of the joint, and partially the insertion of the external pterygoid muscle, keeping the back of the knife towards the temporal, and carefully measuring the depth of the incision so as to avoid the middle meningeal artery. I found that the joints at once yielded to the gag, and the mouth could be opened to the extent of more than an inch. For a day or two some soreness was complained of, but the gag was used almost daily, and seven weeks afterwards the patient left the infirmary, able to open the mouth fairly well, and to masticate her food." However, in November the mouth had again closed, and Mr. Spanton repeated the operation, the result of the second operation being that "she could open her mouth to some extent without assistance, and with the use of force it can be opened wide without causing pain."

3. The second case recorded by Mr. Spanton was that of a girl aged nine, who had suffered from scarlet fever. The mouth was firmly closed, and as the result of the operation which was performed in November, 1879, "she can now (April, 1881) open her mouth sufficiently to take any kind of food, and is recovering very fair lateral movement also." It is to be noted, however, that frequent use of the gag was made by friends at home.

4. There is a case reported by Mr. Sydney Jones.[3] The patient, aged eighteen, when three years of age fell from a window and received an injury to the jaw. It is not stated whether the jaw was broken, but on the removal of the bandages it was found to be fixed. Various methods had been tried with gags and boxwood plugs; but on admission to St. Thomas's Hospital in November, 1883, the jaws were firmly closed. In December Mr. Sydney Jones "cut down on the temporo-maxillary articulation, on the right side, by means of an incision an inch and a half in length, and just below and parallel to the zygoma. On cutting down to the bone several vessels were divided and ligatured. After division of the masseter muscle the periosteum was separated from the bone, the condyle being firmly anchylosed to the zygoma and temporal bone, and quite immovable. A triangular wedge-shaped piece of bone, the base of the wedge being behind, was removed from the condyloid process by means of the saw. The lower jaw was then found to be movable to a slight extent, and, after the introduction of a lever between the jaws, the interval, which had only been half an inch, was increased to one inch and a half." On Jan. 14th, the range of movement not being satisfactory, a similar operation was performed on the left side. Both operations were followed by considerable pain and constitutional disturbance. On Feb. 9th vertical movement to about one inch was possible, and the masticating power was feeble.

5. Mr. Richard Davy[4] has recorded three cases. The first was that of a woman aged fifty, who in 1877 suffered from a large abscess connected with a tooth on the left side. She could only pass a pin between her teeth. The left temporo-maxillary joint was partially fixed. On Nov. 5th, 1878, Mr. Davy "excised the left condyle of the lower jaw by an inch cut at right angles to the axis of its neck, nipped the neck across, and removed the condyle with the end of a pointed bone forceps." On Nov. 20th "she could speak plainly, and had masticated a quarter of a pound of mutton." Unfortunately, in the following month she died suddenly from the bursting of an aneurysm of the aorta.

6. Mr. Davy's second case was that of a girl aged nine with "asymmetrical development of the facial bones following scarlet fever." The same operation was performed on Feb. 8th, 1879, on the left condyle only, the immediate result being that she could at once open her mouth sufficiently wide for the insertion of a finger. Mr. Davy reported in 1886 that "there is marked improvement in her power of speech, and increasing facility of mastication."

7. Mr. Davy's third case was that of a man aged forty-seven who suffered in 1880 from toothache on the left side. Fourteen months before admission his lower jaw became

[2] THE LANCET, April 16th, 1881.
[3] THE LANCET, Aug. 9th, 1884.
[4] THE LANCET, Sept. 18th, 1886.

fixed. He could open his mouth only wide enough to admit a fork. On May 12th, 1885, Mr. Davy performed the operation described above, the condyle and part of the neck being removed, and also the attachment of the pterygoideus externus muscle. The mouth could be immediately opened and three fingers inserted. In August, 1886, he could open his mouth three-quarters of an inch, and his powers of mastication were very good.

8. Mr. Christopher Heath[5] records four cases. The first was a case of enlargement, probably due to rheumatic arthritis of the left neck and condyle of the lower jaw. The patient was a female aged thirty-two. She had suffered from rheumatism of the elbows and in 1872 had an attack of partial hemiplegia of the left side, which caused the jaw to be drawn over to the right side, the middle of the symphysis lying vertically beneath the centre of the right pupil. Between the left angle of the jaw and the zygomatic arch there was a hard bony mass continuous with the jaw and extending forwards to the malar bone. On March 14th, 1883, Mr. Heath attempted under the influence of chloroform to move the jaw, and, that failing, he made a vertical incision along the upper two-thirds of the posterior border of the ascending ramus of the jaw down to the bone, which was divided by an Adams' saw. The upper fragment was then with some difficulty levered out of its position with an elevator. The portion of bone removed consisted of the enlarged condyle, the neck of the left ramus, and a small portion of the posterior border of the coronoid process. The patient made a tedious recovery, and some months later was reported to have satisfactory movements of the jaw.

9. Mr. Heath's second case was one of ankylosis of the right temporo-maxillary articulation. A female aged thirty-two when eight years old was kicked by a horse. She could not separate the teeth. On May 30th, 1883, Mr. Heath made a horizontal incision an inch and a half long along the lower border of the jaw. The bone was divided downwards and forwards by a saw at the anterior border of the masseter. Another cut was made at an angle of 30° with the first, downwards and backwards, and a triangular piece of bone removed, measuring two-thirds of an inch at its lower border. She had considerable constitutional disturbance afterwards, the temperature rising to 103·2°F. On Nov. 21st she was reported to be able to eat soft food, but unable to bite anything hard.

10. Mr. Heath's third case was one of closure of the jaw owing to adhesions between the zygoma and condyle. A male aged twelve, when two years of age, fell on the left side of the head, an abscess forming above the zygoma. There was one-sixteenth of an inch interval between the teeth. On Dec. 12th, 1883, Mr. Heath first divided all the soft tissues with a tenotomy knife, and as that was of no avail he removed with a chisel the lower portion of the zygoma and the condyle. The jaw could then be opened one inch. On Jan. 6th, 1884, when the patient was discharged, the mouth could be opened half an inch.

11. Mr. Heath's fourth case was one of ankylosis of the left temporo-maxillary joint in a female aged nine. In infancy she had measles and otorrhœa. In 1879 Mr. Heath divided the neck of the condyle without much relief. In March, 1884, the teeth could only be separated one-twelfth of an inch. Mr. Heath made a horizontal incision three-quarters of an inch in length over the left neck of the lower jaw, divided the neck with a chisel, and removed a piece half an inch in length. The jaws could then be separated one inch. When discharged from hospital (the date not being given) she could open the jaws three-quarters of an inch and bite through a hard crust.

12. Mr. Heath[6] records another case in a young man aged sixteen who had scarlet fever in 1881. In December, 1886, he made a small incision within the mouth, immediately above the last molar tooth, and on a steel director pushed an Adams' saw beneath the masseters and divided the ramus horizontally. There was no hæmorrhage from the inferior dental, but the nerve was injured. In July, 1887, the patient is reported to be able to open the mouth nine-sixteenths of an inch.

13. Mr. Frederick Page[7] reports the case of a boy aged thirteen who had four years previously suffered from measles with purulent discharge from both ears—worse from the left. He could only open his jaws slightly and had no lateral movement. An attempt was made to force the jaws open with a gag, without effect. On March 28th, 1887, Mr. Page made an incision one inch and a quarter long along the lower border of the zygoma down to the condyle, and another incision at right angles three-quarters of an inch long. McEwen's chisel was driven through the line of the articulation and the condyle removed. The power of chewing was established at once. Six months later a photograph was taken, which represents the mouth opened to its fullest extent.

14. Mr. Frederick Page[8] reports another case of bony ankylosis of the right temporo-maxillary joint in a girl aged nine. She had when two years old measles followed by profuse discharge from the right ear. On admission into the Royal Infirmary, Newcastle-on-Tyne, the jaws could only be slightly opened. On March 5th, 1889, Mr. Page made a semilunar incision, an inch in length, a little below and parallel to the zygoma. With a chisel a section of bone was made, running obliquely downwards and backwards from the centre of the sigmoid notch. The lower jaw was firmly welded to the skull. This connexion was cut through and a portion of bone removed. For a few days the right eye could not be closed. Seven months after the operation the mouth could be widely opened.

15. There is a case of ankylosis of the right temporo-maxillary joint reported by Mr. Herbert Allingham.[9] A boy aged eight had three months previously fallen on his chin, and had ever since complained of pain in the right joint. He could open his mouth half an inch, but with pain. On Dec. 7th, 1877, an incision two inches long was made over and along the zygoma, and down the posterior margin of the jaw for a similar distance. The skin was dissected off the parotid fascia, and the fascia and masseter were divided from the lower border of the zygoma. The external carotid was wounded and tied. With an Adams' saw and bone forceps the neck of the jaw was divided, and with considerable difficulty the condyle was removed. The operation was followed by facial paralysis. On Nov. 2nd, 1888, the mouth could be opened to the full extent, and there was no paralysis of the face.

16. Mr. Bennett[10] reported a case of bilateral ankylosis in a man aged twenty-eight. It was the result of rheumatism and had lasted three years. Removal of the left neck and condyle, and subsequently of the right, had been performed, and five weeks later a portion of bone one inch in width was removed from the left ramus. Rapid ossification took place after these operations, and the jaw became again quite fixed. On Dec. 6th Mr. Bennett exposed the right angle of the jaw by a crescentic incision and excised it. On Dec. 13th, no movement being obtained, a similar operation was performed on the left side. For a time the power of swallowing was lost from inability of the supra-hyoid muscles to act, having lost their fixed point. Three days later the power returned. On April 26th he could open his month one inch and a quarter.

17. There is a case reported by Mr. Barker[11] of a girl aged fifteen who, when five years of age, fell and injured the left side of the jaw. There was at first stiffness, but recently the left side of the jaw had showed great deformity, and the movements of the jaw had become limited. The mouth could only be forced open a quarter of an inch, and there was no lateral movement. On Oct. 9th, 1891, a one-inch incision was made below and parallel to the zygoma, through the skin and fascia, the soft tissues being then separated with an elevator. A mass of bone surrounding the joint was exposed and removed with a chisel. The neck of the bone was then chiseled away. No vessels required ligation. On the eighth day the dressings were removed, and the mouth could be opened half an inch. There was some paralysis of the orbicularis palpebrarum, so that the patient could not close her eye; but after a little time this recovered. A gag was inserted and used continuously for two months, and she was ordered to use it for several months after. In December, 1892, she could open her mouth one inch and a quarter, and she had also free lateral movement.

18. Mr. Heath[12] relates the case of a man aged twenty-seven with ankylosis on both sides. It came on after scarlet fever, when he was seven years old. No movement of the jaw could be obtained. The right side was operated on by the removal of a wedge of bone near the angle. Four months afterwards a similar operation was performed on the

[5] Brit. Med. Jour., vol. ii., 1884.
[6] Ibid., vol. ii., 1887.
[7] Ibid., vol. ii., 1887.
[8] Ibid., vol. i., 1889.
[9] Ibid., vol. i., 1890.
[10] THE LANCET, May 18th, 1889.
[11] THE LANCET, May 20th, 1893.
[12] Injuries and Diseases of the Jaw. Third edition, p. 405.

left side. Four months later the patient is reported as being able to open his mouth one inch and a quarter.

19. Professor Humphry, in a pamphlet published in 1856, gives a case of osteo-arthritic alteration of the right condyle, causing deformity and crepitus on mastication. He made a curved incision from the side of the orbit to the ear, and a second upwards in front of the ear. The condyle was then divided with a narrow saw. This not being sufficient, another portion of bone was removed, the condyle, a portion of the neck, and the external pterygoid being excised. The result was good mastication.

20. The last case I have to record is my own, to which I have already referred (under 2). A woman twenty-two years of age was admitted into the South Devon Hospital on Sept. 13th, 1892. When nine years of age she had scarlet fever, after which she was unable to open her mouth. In 1880 she was operated upon by Mr. Spanton, and again in the following year. At the time of her admission the jaws were perfectly closed, it being impossible even with the gag to separate them. Two lateral incisors on the left side had been removed to enable her to be fed. The lower jaw had evidently not developed with her growth and was much smaller than it should be. Fig. 1 represents her condition before the operation. On Sept. 16th she was operated upon. The details of the operation are as follows. An incision about

FIG. 1.

one inch and a half long was made at the angle of the jaw on the right side, parallel with the line of the jaw, the point of the angle being at the centre of the incision. The knife was carried at once down to the bone. With a raspatory the whole of the periosteum on the outer and inner surface of the angle of the jaw was lifted from the bone, together with the muscular attachments of the masseter on the internal pterygoid. A narrow saw was then applied, and a triangular piece of bone was removed, including the angle of the jaw, and measuring at its base about one inch. There was little hæmorrhage, no vessel requiring ligature. A small drainage-tube was inserted and the wound closed with silk sutures. A precisely similar operation was then performed on the left side, and on its completion the jaw could be opened to its widest extent. The patient suffered from no constitutional disturbance and was able to swallow fluid nutriment the same evening. On the third day the dressings were removed and passive movement was commenced. This was continued daily, the patient suffering little or no pain from the movement. Fig. 2 represents the condition of the patient after the operation. From the time of the operation until now she can open her mouth to the full extent and can masticate very well. There is very slight lateral movement.

I believe, so far as my investigation goes, that there is no other recorded case in which this operation has been performed on both sides at the same time. In the case related by Dr. Maas the right side was first operated on, and four or five months later the left side. In Mr. Bennett's case (Case 16) a week elapsed between the first and second operations.

There are here twenty recorded cases of operation for closure of the jaws the result of injury or disease of the temporo-maxillary articulation. Of these, seven resulted from the after-effects of scarlet fever, three from measles and subsequent otorrhœa, three from rheumatism, two from affections of the teeth, and five from injury. The operations performed were excision of the condyle or portion of the neck in eleven cases, Esmarch's operation in five cases, division of ligaments in two cases, simple division of the ramus in one case, and removal of portions of the neck in one case. In nearly all the cases various attempts had been made to remedy the defects by the use of the gag under anæsthetics and by the subsequent insertion of boxwood plugs. This practice was attended with universal failure, to say nothing of great suffering to the patients, loss of teeth &c. It is to be hoped, therefore, that for the future this futile method will be dismissed as worse than useless.

The division of ligaments by Mr. Spanton's method does not hold out much prospect of permanent success. It

FIG. 2.

will be noticed that Mr. Heath tried it in one of his cases (Case 10) and failed. Nor is simple division of the ramus encouraging. There remain, then, to discuss the other two methods—viz., excision of the condyle, with or without a portion of the neck, or Esmarch's operation for removal of a wedge-shaped portion of the bone. Eleven of the cases were operated on by the former method, so that it may be presumed that hitherto surgeons have given it the preference. As regards the operation itself there can be no doubt that of the two it is by far the most difficult. Anatomical considerations would alone make it so. In one case the external carotid was wounded, and in others a facial paralysis ensued, which, although of only a temporary character, yet sufficiently demonstrates the dangers to the facial nerve. In most of the cases several vessels required ligature, and the recovery was tedious and sometimes attended with considerable constitutional disturbance. The resulting scar, also, on the face, especially in females, must be disfiguring. If, however, the results were vastly superior, there might be a compensation for these drawbacks.

Taking the recorded results as a whole, I am inclined to think that they are not sufficiently good to warrant us in incurring the extra risks and difficulties of the operation. In five of the cases the mouth could only be opened—one one

inch, two three-quarters of an inch, one nine-sixteenths of an inch, and one half an inch. In no case is there any voluntary lateral movement reported, with the exception of Mr. Barker's case (17), so that the grinding power in mastication, which one might have supposed would have been restored by this operation, is not recovered. The danger of subsequent ossification is also demonstrated in Case 16.

I will now compare this procedure with the modification of Esmarch's operation which I have described. From an anatomical point of view there can be no doubt that the operation is a far simpler one. The incision is so placed behind the angle of the jaw as to be hardly perceptible. The careful raising of the periosteum from the bone not only renders the future steps of the operation almost bloodless, but affords great support to the central portion of the jaw, especially when, as in my case, both sides are operated upon simultaneously. The only really important parts divided are the inferior dental artery and nerve. From the artery there is little or no hæmorrhage, and should it occur it is most easily controlled by plugging. The division of the nerve is absolutely of no importance, the only result being slight anæsthesia of the skin over the chin. The division of the bone at the angle sets free the whole of the masticatory apparatus of the lower jaw, which can be at once opened to its full extent. The subperiosteal method preserves the attachment of the superficial portion of the masseter to the angle of the jaw, and also that of the internal pterygoid to its inner surface, thus keeping intact the two elevator muscles. If a sufficiently large wedge of bone is removed the danger of relapse is very remote. Taking, therefore, into consideration the simplicity of the operation as compared with excision of the condyle, and the superiority of the results, I think it may fairly be suggested that the modification of Esmarch's operation is the one which surgeons in the future should prefer.

The Crescent, Plymouth.

ABSCESS IN THE RIGHT CEREBELLAR HEMISPHERE, ASSOCIATED WITH PARALYSIS AND FITS LIMITED TO THE SAME SIDE.

BY DAVID DRUMMOND, M.D. DUB., D.C.L. DURH.,
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THE surprise and disappointment experienced by my colleague, Dr. Hume, and myself in connexion with the following case will be readily understood after perusal of the brief record I venture to submit to the readers of THE LANCET. It is, I think, at all times expedient to give publicity to our failures, but it is an imperative duty we owe to the profession to make known our misfortunes when an exception, real or apparent, to a well established principle happens to underlie them. The disappointment was intensified by the fact that the attempt to interpret the clinical symptoms aright was made with great care.

The patient, a girl nine years of age, was sent into the Royal Infirmary by a medical man, who furnished the statement that for some years there had been a purulent discharge from the right ear, and that a few days prior to her admission headache, vomiting, paralysis of the right arm, and right-sided convulsions developed. The child was well grown but thin. She lay in bed on the left side. The right arm was helplessly paralysed, the right angle of the mouth was weak, and the leg on the same side showed evidence of paralysis, though certain voluntary power remained. Every hour, and sometimes more frequently, the fit returned. The spasm began in the face and almost immediately extended to the arm and occasionally to the leg, but remained limited to the right side. During the interval between the fits the child seemed to regain consciousness, and without doubt she did so when the interval was unusually lengthened, and then it was observed that she was completely aphemic—that is to say that she seemed unable to utter a syllable, though to a certain extent she understood spoken language. There was early optic neuritis. No obvious discharge was to be detected from either ear, though cotton wool introduced into the right meatus was soon moistened with offensive purulent fluid. The side affected with spasm and paralysis (the right) of course suggested a lesion in the left temporo-sphenoidal lobe, and a careful examination was made for evidence of left middle ear mischief, and was found in the shape of a perforation and some fetid discharge. It was therefore decided to explore the temporo-sphenoidal lobe on the left side in search of an abscess. This my surgical *confrère*, Dr. Hume, did in the usual way, but without success. He next trephined over the left arm-centre, but we were again disappointed. Finally he explored the left lobe of the cerebellum, but with a like result. During the few days succeeding the operation the patient seemed to be somewhat better, at all events the fits were less numerous and consciousness was regained, but the arm remained paralysed and the speech defect was unaltered. She died a week later, and at the post-mortem examination a large abscess cavity, holding about an ounce of pus, was found in the right lobe of the cerebellum, located near the surface and about three-quarters of an inch from the medulla. The left cerebral hemisphere presented no pathological changes other than the usual subarachnoid hæmorrhage consequent upon the exploratory punctures. Both tympanic cavities were extensively diseased. I may say that I made the post-mortem examination myself and searched carefully for a lesion on the left side of the brain that would explain the right-sided paralysis and convulsions, but found none. It will thus be seen that any attempt to explain the symptoms by direct pressure upon the motor tract below the decussation is highly unsatisfactory; but apart from the remote situation of the abscess, pressure on the medulla would scarcely cause localised convulsive seizures, nor would it paralyse the facial muscles. We are, indeed, forced to conclude that the explanation lies in one of two directions: either a lesion in the left hemisphere has been overlooked, or the paralysis and fits, limited to the right side, were the result of some indirect influence (reflex) arising through the known connexion between the right cerebellar lobe and the motor cortex of the left cerebral hemisphere. The case is to me a great puzzle, especially as I am convinced the former hypothesis is incorrect.

Saville-place, Newcastle-on-Tyne.

AN EPILEPTIC (?) FIT FOLLOWED BY FORTY-SIX HOURS' UNCONSCIOUSNESS.

BY FELIX ROTH, M.R.C.S., L.R.C.P. LOND.,
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I THINK it advisable to mention the position of Warri, as heat or malaria may have had something to do with the following case. Warri is situated in lat. 5° 31′ 0″ N. and long. 5° 51′ 0″ E.; it lies in the higher delta, about forty miles from the sea, ten feet above the same, surrounded by mangroves, on the banks of a river about 300 yards across, which, on an ebbing tide, leaves much foul-smelling mud exposed to the rays of the sun. The following is from the meteorological register (which I take myself) for Jan. 2nd, 1894: highest temperature, in sun 150° F., in shade 94°; wind, W.; weather, very dry.

On Jan. 2nd, 1894, I was called to see a European suffering from unconsciousness. The patient's mother suffers from epilepsy, having generally one fit every year; a sister has also suffered from the same disease; the other members of the family are quite healthy. The patient—a strong, healthy looking, and well-nourished man twenty-four years of age, about five feet four inches in height, with a slightly thick neck—has always lived a steady life; he has never had syphilis, and drinks, as a rule, water; he has lived for some time in Australia and has never had sunstroke. For the previous fifteen months he had lived in Warri and had had a good deal of mental trouble on account of family affairs. (The patient gave me this history after he had completely recovered.) I was told by two natives that at 9.30 A.M. the man was working as usual on the beach when a fight took place amongst some other natives; he went to them and tried to pacify them; while doing so he suddenly uttered a shriek, threw up both hands, and rushed forward, then stopped suddenly, and fell on his back on the sand. Nothing hard had struck his head. They told me that he then became quite stiff, very white, and after a short time limp again. This history was given me by both natives (in pigeon English) individually. I came to the conclusion that it was most

probably an epileptic fit. Subsequently I found that there was a family history of epilepsy. The patient's condition on Jan. 2nd was as follows:—At 10 A.M. I found him in bed watched by two natives. The face was not flushed; the pulse was 80 and normal; the respiration was 20 and normal; the temperature was normal. The pupils were dilated and did not react to light. The conjunctival reflexes were absent, there were no knee-jerks or ankle-clonus; in fact, there were no reflexes at all. I gave two minims of croton oil on the tongue. On pouring water into the mouth and holding the nose it took some time before it passed into the stomach; there was no coughing with this. At midnight the pulse was 74, the respiration was 16, and the temperature normal. The pupils did not react to light. A short time before I arrived he was trying to sit up in bed and rolling himself from side to side; he had to be prevented from falling on the floor. While this was going on there was tonic flexion of the wrists, and the fingers and thumb on both sides were tonically flexed into the shape of a cone and kept perfectly straight; at the same time flexion and extension of the arm and forearm were being performed, the tips of the fingers impinging on to the ensiform cartilage each time. These movements lasted for six hours. During the night his mouth was moistened with brandy-and-water. Urine was passed involuntarily into the bed. On the 3rd, at 6 A.M., he was less restless and ultimately fell into a deep sleep, all movements having stopped. At 3 P.M. the pupils reacted to light sluggishly; the pulse was 74, the respiration was 16, and the temperature was normal. The urine was again passed involuntarily into the bed. The bowels had not been opened. The patient was unconscious, but moved his hands very slowly to any place that was deeply pricked. Knee-jerks and ankle-clonus were just perceptible. On the 4th, at 8 A.M., the patient became slightly conscious; on speaking loudly to him he appeared to understand in a dull sort of way. The bowels had not been opened; he was able to swallow. A five-grain pill of calomel with colocynth and a quarter-grain pill of podophyllin were prescribed. The pupils reacted to light less sluggishly. At 6 P.M. the bowels were opened. He took slops well; he was more conscious, but did not remember familiar faces or recognise that he was in his own room; all reflexes were more marked; he was still unable to localise irritation quickly. For the next few days he improved. On the 6th it was noted that the left pupil was widely dilated and it remained so till Jan. 21st, the right one being normal. From this day till Feb. 4th both pupils were contracted; after this date the left one again became widely dilated. Purges were freely given. There has never been any localised pain. On Feb. 28th the patient was again visited; the reflexes were all normal. The last note taken (May 13th) states: "Patient quite well; he has had no more fits."

Warri, Niger Coast Protectorate, West Africa.

NOTE ON THE SPREAD OF INFECTIOUS DISEASE BY VAGRANTS.

BY JAMES NIVEN, M.A., M.B. CANTAB., M.A. ABERD.,
MEDICAL OFFICER OF HEALTH OF MANCHESTER.

I SHOULD like to express my views on the question of dealing with vagrants, as I consider that the proposals put forward and carried at the recent conference convened by the London County Council are, in the main, inadequate and impracticable. I do so with considerable hesitation, as I am aware that the objections which I urge against them do, to some extent, apply to the plan which I venture to propose. But I have satisfied myself by conversation with those in charge at lodging-houses and unions that the proposals which I put forward, if they could be made law, would probably be workable. It is necessary to premise that an infringement of the personal liberty of the tramp or of those who frequent common lodging-houses or lodging-houses of a similar stamp does not need to be regarded as a general encroachment on individual rights. The nomad part of the community is, by virtue of the character of their mode of life, however honest most of them may be, specially liable to infectious disease, more particularly to small-pox, and is also specially liable to spread the disease when contracted. Like medical men, nurses, and attendants in a small-pox hospital, therefore, they ought to be made to take special precautions on behalf of the community.

In dealing with the question of the diffusion of infectious disease by tramps it is necessary to take into account the character of these people. Many of them are inaccessible to the terrors of the law, and to attempt compulsory measures with individual tramps could only result in failure. To take small-pox, for instance, it would be impossible to obtain the vaccination of 400 men in a common lodging-house on the appearance of small-pox. It would require a body of police to enforce the proceeding, and the enforcement would give rise to scenes that would soon render its abandonment necessary. Other effects would result. Tramps would avoid common lodging-houses and seek out other places of shelter; or else it would be to the interest of a tramp to hide his disease until the other inmates of the lodging-house had been made aware of it, so as to give them an opportunity to decamp. It would produce an increased flow of tramps into houses other than common lodging-houses, and probably other unforeseen evasions would take place. Detention for a fortnight is a perfectly practicable thing so far as the tramp is concerned, but it would entail maintaining those detained. I have calculated that one detention of 400 men would cost in that time £280. The tramp himself is but little amenable to legal measures. The fear of being sent to prison would often not be any inducement for him to submit. There is, I should say, but one way to secure the vaccination of all tramps, and thus to prevent them being the means of spreading small-pox, and that is to get a law passed putting it in the power of the Local Government Board to secure the recent vaccination of all persons seeking shelter in registered lodging-houses or in the union. For that purpose it would be necessary to make it impossible for tramps to live unless they were protected by recent vaccination. They would not be permitted to enter any common or other lodging-house or union unless producing a certificate of recent vaccination signed by a public vaccinator or medical officer of a union and exhibiting the marks of revaccination. In the case of unions as an alternative to the production of a certificate the medical officer would where requisite revaccinate on admission. By recent vaccination would be meant vaccination within ten years.

It would not be necessary that such vaccination should be successful, but it would be necessary either that such vaccination had been successful, or that if unsuccessful its want of success was due to previous successful revaccination with visible marks. In order to mark out recent vaccinations the marks should be in a fixed figure, such as a straight line, which could be varied from decade to decade. To secure the observance of the law a heavy penalty would be imposed on any lodging-house keeper or union officer who admitted into his lodging-house or union any person who failed to comply with the requirements of the law. In this way only would it be possible to secure the enforcement of such a law. *The responsibility of seeing it carried into effect would be laid entirely on some responsible person, whose interest it would be made to look sharply after its observance.* It is, perhaps, necessary explicitly to insist that any proposals which do not embrace registered lodging-houses other than common lodging-houses would be liable to give rise, if carried into effect, to consequences the reverse of those aimed at.

Amongst other questions it is desirable to know whether a tramp has been exposed to infectious disease, whether small-pox or other. For that purpose every tramp would carry a book in which would be inscribed the date of his leaving his last shelter in this form:—Left ..... lodging-house in (Manchester). No infectious disease. Signed, June 5th, 1895. The date, place, and name of lodging-house to be in the same handwriting, which would be that of the manager of the lodging-house, who would sign the book. If an infectious disease had occurred in the lodging-house or union during the stay of the tramp there the manager or officer would sign the book over the words "No infectious disease," and in the place reserved for his name he would put the name of the infectious disease to which the tramp had been exposed. The objection might be urged against this plan that it would take no account of the non-tramp element—of people, that is, temporarily obliged to use a common or other lodging-house who had not previously been at any common lodging-house. Clearly it would be necessary to take account of those. In such a case the person desiring to go to a lodging-house would procure a book, and during the time that he lived in a common or other registered lodging-house or union would be under the same regulations as a vagrant. If not previously

revaccinated within ten years he would require to be vaccinated and to produce a certificate. He would also be required to state his last place of residence and whether he had recently been exposed to infection, under a penalty in case of false information. To revert to the book, the manager of the lodging-house or union officer would in all cases keep a copy of the entries made in the tramp's book and also in the books of persons other than tramps staying at the lodging-house or union; so that, in case of the loss of the book, the statements of the person admitted into a lodging-house might be confirmed or otherwise. In such a case, however, special precautions would require to be taken. The loss of the book would involve detention as well as rigorous disinfection and, in times of danger, isolation. Loss of the vaccination certificate would entail the necessity of revaccination. A penalty would be imposed on any person making a false entry in the tramp's book or for alteration of his own register of the entries in the tramp's book. As regards disinfection of clothing, this would in general be unnecessary in the case of persons who had not been in intimate contact with the person actually attacked by the disease. There is very little evidence of disease being frequently conveyed in that manner, and though as a measure of added security it is well to carry out such measures of disinfection, especially where there has been intimate exposure to infection, it would scarcely be possible systematically to disinfect the clothing of the inmates of lodging-houses. It is by no means one of the most urgent considerations. Where it could be established that a limited number of the inmates of a lodging-house had been intimately exposed to infection their clothing might be disinfected by being boiled or it might be taken (as it is) to the public disinfecting station and disinfected by steam. At the Manchester union the clothing of all tramps admitted is disinfected in a hot air chamber.

One other matter requires careful attention. So far as I can judge ignorance of the nature of slight small-pox is responsible for more damage than the movement of vagrants. Clear instructions for the recognition of slight cases of small-pox should be widely distributed, and especially all lodging-house keepers should be specially instructed in regard to the disease. No amount of trouble can be considered wasted which aims at extending the recognition of this disease. It is a cardinal difficulty both in lodging-houses and in private dwellings, perhaps more so in the latter than in the former. The frequent mistakes between small-pox and chicken-pox need not be made by attending to these rules: 1. Adults rarely have chicken-pox. If two adults appear to have chicken-pox in one house the medical attendant should suspect small-pox. 2. Properly vaccinated children under seven years of age very rarely have small-pox. It is curious how people forget to apply this crucial test by looking for the vaccination marks. 3. With few exceptions children attacked with chicken-pox experience no initial sense of illness. With small-pox they almost always have well-marked illness. 4. The distribution of the eruption is different. In slight small-pox the eruption is almost always on the face and limbs, sparing the abdomen and front of the chest. In chicken-pox there is generally a large number of pocks on the front of the chest and abdomen. 5. The eruptions are different in character. To mention no other points of difference the eruption of small-pox is tolerably uniform in size and round in shape. The eruption of chicken-pox is very variable in size, and many of the pocks, on the body especially, are of an oval shape. 6. The eruption of chicken-pox is itchy in a great many instances; that of small-pox is, at first, not so. Only long experience enables one to tell at a glance which disease one has probably to deal with, but with due care no one need go wrong in arriving at a differential diagnosis.

Manchester.

THE French Minister of the Interior has awarded a gold medal to Dr. Soulié of Algiers on account of his devotion to the sufferers in the recent epidemics.

THE SHEFFIELD PUBLIC HOSPITAL.—At the annual meeting of the governors of the Sheffield Public Hospital on July 23rd an appeal was made for funds in order to rebuild the institution. The Duke of Norfolk, who was in the chair, and who had himself given £5000 towards the undertaking, announced the bequest of £6000 by the late Mr. Bernard Wake, but said that £50,000 were still required. Subscriptions to the amount of £17,000 were promised at the meeting.

"THE HYDERABAD CHLOROFORM COMMISSION."

THE DANGER SIGNAL OF THE CHLOROFORMIST.

BY ARTHUR H. WARD, F.R.C.S. ENG.,
LATE ANÆSTHETIST TO ST. GEORGE'S HOSPITAL.

THE recent paper and discussion on the chloroform question at the Royal Medical and Chirurgical Society, were, from the practical chloroformist's point of view, unconvincing. The final proof of the action or non-action of chloroform upon the heart has not, in the opinion of rival experts, yet been demonstrated. It would seem that complex cross-circulation experiments are so open to sources of fallacy and their tracings so liable to conflicting interpretations that as guides to practice their value is not very great. It is not possible to feel that, at present, Surgeon-Lieutenant-Colonel Lawrie has proved by experiment the truth of his thesis that chloroform is perfectly safe when the respiration alone is watched. We have, therefore, for the time being to fall back on the teachings of clinical experience. The opinion of the majority of expert anæsthetists who spoke was that the respiration alone is an imperfect guide to the condition of a patient under chloroform, and we were advised to watch the pupil, the pulse, and the patient as a whole. It certainly seems probable that if we watch the respiration alone we are in danger of pushing the chloroform to the point of respiratory narcosis; and since this will come on gradually we may not recognise the condition till the patient is in a state of extreme danger. It is all very fine to say that the patient can always be brought round by artificial respiration; this, involving as it does the stopping of the operation in many cases, is a most inconvenient and alarming complication and should never be allowed to occur. In my view any interference with the respiratory centre by chloroform, however slight, is a sign of dangerous overdosing. Again, if respiration alone be watched, how is the beginner—experts even were once beginners—to distinguish between the shallow and irregular respiration of reflex inhibition, which so often precedes vomiting, and the insidious onset of respiratory narcosis? Some other danger signal is required. The pulse? I think that if chloroform be pushed to the point of affecting the pulse, if this be possible, a dangerous overdose has again been given. The heart, too, is liable to reflex inhibitions, and often becomes irregular and depressed during vomiting and also during the violent irritation of the sympathetic system met with in abdominal operations, in either case quite independently of the anæsthetic. Therefore, as an indication of the degree of the chloroform narcosis, I think the pulse is unreliable.

We require some indication which shall tell us when the cerebrum is completely narcotised, and shall also warn us when we are in danger of affecting the respiratory centre. This indication is found in the pupil. The third nerve centre, which governs it, is the first of the automatic centres of which we can have cognisance; it is not a vital centre, like the respiratory, and its narcosis is not in itself followed by dangerous complications. I regard the pupil, which is the visible sign of the condition of this centre, as the danger-signal for which we are looking. I find that the pupil has a regular cycle as the patient goes under. It is first dilated and active, it then becomes contracted, and lastly it becomes dilated and fixed. The first state is a sign of imperfect narcosis, the second of complete and safe narcosis, and the third of danger from imminent narcosis of the respiratory centre. The cause of this cycle is, I suggest, as follows. In imperfect narcosis, going under or coming round, the pupil is dilated and active; dilated because impulses, mental, sensory, or sympathetic, affect the half-narcotised cerebrum, and cause reflex inhibition of the third nerve centre; and active because the centre itself has not been reached by the anæsthetic. A similar dilatation is produced under ordinary conditions by fright, pain, or a blow on the abdomen. As narcosis deepens the pupil contracts because the cerebrum is now completely under, all cerebral reflexes are barred, and the third nerve centre is consequently unimpeded in its action. A similar state is seen in deep sleep. If the narcosis be pushed further the pupil will slowly dilate and become less and less active to light till it is widely dilated and fixed, because the narcosis

has now reached the centre itself and has gradually overtaken it; consequently nervous control has ceased and the pupil has dilated; at the same time the light reflex has been abolished. A similar condition of pupil is seen in general cerebral compression. This fixed dilatation indicates great danger, for respiratory narcosis is imminent; indeed, under no circumstances should narcosis be pushed to the extent of full dilatation of the pupil. Thus the golden mean of safety is indicated by a contracted pupil, any material dilatation means, "Look out." The patient is either coming round and developing reflexes, or going too far towards respiratory narcosis. It is easy to distinguish between commencing reflex dilatation and early narcosis dilatation. In the first the pupil is active and other reflexes, shallow respiration, vomiting, or movement will follow; in the second the patient is stertorous, the pupil sluggish, and the eyeballs fixed. In the first the indication is for more chloroform, in the second for the suspension of the drug till contraction recurs in consequence of the recovery of the third nerve centre. I believe that if the pupil be read in this way all interference with respiration or the heart can be avoided. I have observed the cycle of change many times and I have never been played false; the explanation, I submit, is reasonable on general principles and agrees with the conditions of the pupil observed in other connexions.

For all ordinary operations a contracted pupil should be maintained, but in abdominal surgery it is sometimes necessary to combat the violent sympathetic irritation by pushing the chloroform till there is slight narcosis dilatation of the pupil. Beyond this I believe it is useless as well as dangerous to go. Any further abdominal rigidity is, I suggest, due either to inflammatory fibrosis or to the development of abnormal reflex links between the sympathetic and spinal nerves in highly neurotic subjects. In either case the condition is beyond the control of anæsthesia. Dr. Hewitt quoted a case in which he found no pulse at the wrist while the respiration was normal. As the case was an abdominal operation I venture to suggest that the cardiac condition may have been due to inhibition in consequence of violent sympathetic irritation and nothing to do with the anæsthetic. In the frog exposure and irritation of the intestine will stop the heart. In man the cardio-inhibitory centre is close to the respiratory centre; there seems to be no reason why, with sufficient stimulation of the abdominal sympathetic centres, reflex inhibition of the heart should not occur even when the cerebrum is narcotised. Had the patient died doubtless the accident would have been put down to chloroform; so in such cases it behoves the anæsthetist to attend to the pulse and to stop the operation if necessary while the heart recovers, but I cannot think that this case proves of necessity the direct influence of chloroform. Doubtless chloroform incidentally depresses the heart, as it does all vital processes; consequently reflex inhibition is more likely to occur than when ether is used. That equally complete relaxation cannot be induced by ether I believe to be a legend handed down from the days of folded towels, when it was impossible to fully etherise many patients.

The time during which I think that the closest attention should be paid to the respiration is while a patient is going under. At this time he is liable, intentionally or from too strong a vapour, to hold his breath. The respiratory centre is thus debilitated from lack of oxygen; then when the necessity of breathing overcomes all other impulses a gasping inspiration is taken, the centre is flooded with chloroform and cannot resist it, the pupil dilates, and death supervenes. Whether or not the heart is affected is undetermined, the point being to avoid the occurrence in any case. This can be done by encouraging the patient to breathe regularly, and if he holds his breath by seeing that only a small dose of chloroform is accessible. In children it is better to use a Junker's inhaler, so that whether they scream or hold their breath only a limited amount of vapour can be taken in; an overdose is thus avoided. In these cases it is my practice to give chloroform till contraction occurs with slight stertor, and then to suspend the administration until some slight reflex is seen, then to give a little more, and so on. I do not think that the pupil is quite so reliable as in the adult, as sudden overdosing with fixed dilatation seems sometimes to occur. Possibly the pupil reflex is imperfectly developed; this I am sure is the case with the corneal reflex, which is quite unreliable as a sign of narcosis in children. Slight stertor is, in my view, the reliable indication.

I venture to recommend these considerations to the inexperienced. I have very often found them of the greatest service in embarking on what may otherwise prove to be a sea of troubles.

Hertford-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

TREPHINING THE SKULL FOR SPASTIC PARALYSIS.

BY NOBLE SMITH, F.R.C.S. EDIN.,

SURGEON TO THE CITY ORTHOPÆDIC HOSPITAL, LONDON, AND SURGEON TO THE ALL SAINTS' CHILDREN'S HOSPITAL.

THE patient was a boy five and a half years old suffering from spastic paralysis. He was unable to articulate except a few monosyllables. The arms were contracted upon the chest, the legs were crossed and partly flexed at the thighs and knees. He was unable to stand, but was quite intelligent. These symptoms had existed since birth, after a protracted and difficult labour. Any material improvement had been looked upon as hopeless. I found a transverse depression in the occipital bone two and a quarter inches wide and about an inch from above downwards, just below the occipital protuberance. Having explained to the parents the uncertainty as to any good following the operation, and they having agreed to take all risks, I operated upon the depressed bone with a trephine of one inch in diameter, and removed two circular pieces of bone, making one opening. The meninges projected forcibly upwards through the opening, showing that there had been some pressure. There was no pulsation of the brain when it was first exposed, but before the completion of the operation pulsation was quite natural. The operation was performed on April 11th, and the wound healed by first intention without a bad symptom. There was at once marked improvement in the child's general condition, and the limbs have become gradually more relaxed, the legs not so much drawn up, and the patient can give the right hand to be shaken, whereas before he was quite unable to do so. He has since continued to improve in respect to the relaxation of the contractions. (July 5th, 1894.) He has slept more quietly since the operation than he ever did before. Although in this case the degeneration of nerve fibres has probably proceeded too far for perfect recovery, yet the operation seems to have proved that in such cases early interference may sometimes relieve or cure the condition. The extravasation of blood which occurs in many such cases, and the practicability of operating and removing this pressure, are points which seem to me worth consideration, and I hope at some future period to discuss this matter at greater length. I was kindly assisted at the above operation by Mr. Bland Sutton.

Queen Anne-street, W.

FATTY HEART AS A CAUSE OF SUDDEN DEATH DURING LABOUR.

BY H. MARTYN EAMES, L.R.C.P., L.R.C.S.ED. & L.M. &c.

WHEN taking charge of a practice some months ago, during my temporary absence an urgent message was left for me to attend a woman in her confinement. Reaching home soon after the departure of the messenger, I made all haste to the address given, and arrived at the house at the moment the patient fell dead on the floor at my feet. The history I elicited was that the woman was suffering from chronic bronchitis, had suffered from shortness of breath and occasional fainting attacks, and had been informed by her medical attendant that she had a weak heart. None of her symptoms, however, were so distressful as to prevent her carrying on the usual work of a labouring man's wife. She was a big, stout, plethoric woman at the full period of gestation, and had expressed herself that morning as feeling exceptionally well for her. The pains had commenced four hours previously, and the medical man whom she had engaged had visited and examined her a couple of hours after, and had informed her that labour was natural and had only just commenced, and hence, of course, there was

no necessity for him to remain with her. After he left her the pains became regular but not excessive, and she walked up and down the room for the next couple of hours, when suddenly she complained of feeling ill. Some stimulant was administered and her medical attendant sent for, but he being out at the time the messenger came for me. I was told that the stimulant had revived her, that she had expressed herself as feeling better and had shortly recommenced her perambulations, and that the pains had continued at intervals, when she again complained of feeling faint, and suddenly fell lifeless on the floor at the moment of my entry. Ether was injected subcutaneously, but there was no response. Turning was impracticable on account of the very partial dilatation of the cervix. Cæsarean section was suggested, but, the operation not meeting with the approval of the friends, was not attempted. The foregoing case appears to me to be illustrative of the imperative necessity of insisting upon the recumbent position during all the stages of labour in those cases where the patient is known to have a weak or diseased heart.

Shipley, Yorkshire.

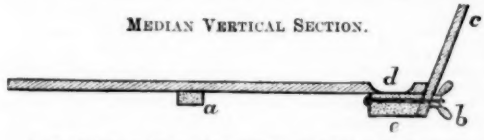
THE VERTICAL FOOT-PIECE ON LEG SPLINTS.

BY F. N. WINDSOR, M.B., B.C. CANTAB., M.R.C.S., L.R.C.P. LOND.,

LATE SENIOR HOUSE SURGEON TO THE OLDHAM INFIRMARY.

I READ with great interest the articles which appeared in the columns of THE LANCET some time ago concerning the evils of the vertical foot-piece on leg splints. I have lately made and used a back splint for fractures of the leg and inflamed knees which I think allows the part to assume the natural position of rest. The foot is somewhat extended, to relax the calf muscles, and may by a simple contrivance be rotated outward to any angle according to the outward rotation assumed by the thigh. The angle of extension is fixed, but a bolt, provided with a butterfly wing nut, and passing through a block beneath the heel of the foot-piece, allows the latter to be twisted through any angle. The diagram readily

MEDIAN VERTICAL SECTION.



a. Cross bar to keep splint steady on bed. *b*. Wing nut. *c*. Foot-piece. *d*. Hollow in back splint for heel. *e*. Block of hard wood through which bolt passes.

explains the build of the splint. Rigidity is obtained by a short steel point, on each side of the base of the foot-piece, being clamped into the hard wood block when the nut is screwed home.

York-place, Chorlton-on-Medlock, Manchester.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

KING'S COLLEGE HOSPITAL.

INGUINAL HERNIA ASSOCIATED WITH HERNIA OF THE BLADDER; RADICAL CURE; REMARKS.

(Under the care of Mr. WILLIAM ROSE.)

HERNIA of the urinary bladder (if we except the condition known as cystocele) is undoubtedly a very rare form of protrusion. Generally associated with other contents of the abdomen, it has most commonly been observed in the scrotal hernia of old men; it has, however, also been described in boys and women. The amount of bladder which may be protruded varies considerably, from a mere saccule to nearly the whole viscus, and the amount of suffering caused to the subject of the hernia will depend partly on this and partly on the reducibility or otherwise of the hernia. In a recent treatise on Hernia[1] we find the published cases of vesical hernia grouped as follows. Out of a total of 36, 26 were scrotal, 4 labial, 2 femoral, 1 vaginal, 1 perineal, 1 ischiatic, and 1 ventral. There can be little doubt that patients with a vesical hernia suffer more than those with an ordinary entero-epiplocele. The irritation of the bladder caused by the nipping of the neck of the protrusion, the collection of urine in the saccule outside, and the tendency to inflammation and calculous deposit which decomposition of the contents is very likely to produce all complicate the case. Therefore, in cases in which it is possible, a radical cure should be performed; this must not include excision of the part of the bladder in the hernia, however small it may be, but only reduction. Excision is apt to be followed by giving way of the stitches, and a sloughing wound with its attendant risks. This would, however, be lessened by the method of suturing employed by Mr. Rose, as would also the prospect of the formation of multiple calculi, with the sutures as their nuclei. For the notes of the following case we are indebted to Mr. W. R. Smith, late house surgeon.

A young woman twenty-four years of age was admitted to King's College Hospital on June 4th, 1893. She had been the subject of a hernial tumour for three years, had suffered from anæmia for some years, and had been under treatment for it at the Victoria Park Hospital. There was a history of her grandfather having been ruptured, but no one else in the family had been similarly affected. She had noticed a swelling in the left inguinal region for about three years, increasing in size on coughing or on going upstairs. It was reducible, and by the advice of her medical attendant she wore a truss until three weeks before going to the hospital, when the hernia became so painful that the pressure of the truss was unbearable. Nine months previously she began to experience pain on micturition, and at times she had gone twenty-four and thirty-six hours without passing urine; she had an impression that at these times the swelling always increased in size. Micturition was often so painful latterly that to obtain relief she had to support the rupture with her hand. On examination an ovoid swelling about an inch long and half an inch wide presented itself in the left inguinal region, with its long axis in the direction of the canal and extending downward and forward towards the centre of the left labium majus; there was a distinct though slight impulse on coughing, and at times the swelling had become as large as a small hen's egg. It appeared to be placed above the spine of the pubis. On lying down the tumour disappeared entirely, but became evident again on standing up. The patient having been anæsthetised with the A.C.E. mixture the following operation was performed (the pubes had been previously shaved and thoroughly purified with a 1 in 20 carbolic lotion). All trace of the swelling had disappeared when the patient was in the recumbent posture on the table. An oblique incision about three inches in length was made with its centre over the external abdominal ring, which was clearly defined, but no protrusion was found and no laxity of the abdominal wall felt. At this moment the patient fortunately vomited, and a small protrusion occurred through the external abdominal ring. This was drawn well down, and after clearing the fascia away from it was incised. The wall was much thicker than was expected, and a few drops of a straw-coloured fluid which proved to be urine escaped, indicating that the cavity of the bladder had been entered. The wound was at once douched with a 1 in 40 carbolic lotion, and the vesical lesion closed by a double row of fine catgut stitches, which included everything but the mucous membrane. During the necessary manipulations a second attack of vomiting caused the protrusion of a small swelling just external to the former one. On laying hold of this the peritoneal membrane gave way and a fine piece of omentum protruded. As this latter was somewhat extensive it was ligatured in successive portions and removed, the stump being returned into the abdomen. The peritoneal sac was now drawn well down, transfixed with catgut, tightly ligatured, and cut away, the upper part at once retracting into the abdomen. Three deep sutures were now passed through the parietal wound and the canal

[1] A Treatise on Ruptures by J. F. C. H. Macready.

closed, whilst the external wound was sutured and dressed in the usual way, a drainage-tube being inserted. After the patient had been put to bed a gum elastic catheter was tied in the bladder and the urine allowed to run off. The first few ounces of urine that passed were blood-stained, but subsequently it came away quite clear, twenty-one ounces being voided in the first fifteen hours. There was no vomiting, and the case progressed to convalescence without a hitch. The patient has been seen since she left the hospital, and although she has had one or two slight attacks of retention there has been no return of the pain or discomfort previously complained of. The cicatrix in the groin is firm, and there is no evidence of any return of the hernia.

Remarks by Mr. ROSE.—This is certainly an unusual case and presents many points of interest. From the previous history it would appear that the patient had for some time been in the habit of going about with an over-distended bladder, which no doubt led to the formation of the saccule found in connexion with the hernial protrusion. No cause for this over-distension of the bladder could be discovered; there was no urethral obstruction or growth at the orifice. It was, therefore, probably one of those cases of spasmodic contraction of the neck of the bladder occasionally met with in nervous females. The saccule consisted mainly of the mucous membrane and of the submucosa, it was considerably thickened, and no muscular fibres could be seen. The connexion between the hernial sac containing omentum and the vesical protrusion was quite sufficient to account for the pain and discomfort experienced by the patient. I contented myself with simply suturing the opening made in the bladder, and did not attempt to remove the protruding portion, hoping that the eradication of the hernial sac would remove the symptoms from which she was suffering, an opinion borne out by the subsequent progress of the case. It would have been very difficult for me to have efficiently closed the bladder at the bottom of the wound, had I excised the whole of the saccule. The opening was sutured in the same way as should always be employed in dealing with the extra-peritoneal portion of the bladder—viz., by passing the sutures through the whole of the thickened walls, except the mucous membrane, a second row of stitches still further ensuring the accurate closure of the wound with the mucous membrane well inverted.

HULL ROYAL INFIRMARY.

STRANGULATION OF INTESTINE BY A BAND; LAPAROTOMY; RECOVERY.

(Under the care of Dr. FRANK NICHOLSON and Mr. HENRY THOMPSON.)

THE symptoms of strangulation of the small intestine by a band or through a hole in the mesentery are practically the same as those depending on strangulation in a hernial sac. This case presents some points of interest, one of which is the recovery of the patient after operation performed so many days after the commencement of symptoms. According to Mr. Treves the average duration until death in a case of strangulation under a band is six days, but this duration depends on the tightness of the strangulation and the amount of bowel involved; the most rapidly fatal cases are those in which a considerable amount of bowel has been severely strangulated. Opium exercises considerable effect in prolonging the length of the fatal illness, for without surgical aid the obstruction is certain to be fatal. Increased knowledge of the conditions grouped under the heading of "obstruction of the bowels" has shown the necessity for early operation, and instead of viewing these cases as hopeless (the outlook a few years ago) the surgeon can now almost promise cure if the patient has not been kept under observation for too long a time. For the notes of this case we are indebted to the house surgeon, Mr. Sutcliffe.

A man fifty-nine years of age was admitted into the Hull Infirmary on Oct. 24th, 1893. The history that he gave was that, although he had for some months lost flesh, he had enjoyed good health up to seven days before admission, since which time he had had pain, vomiting, constipation, and gradually increasing abdominal distension. Three or four days before admission his bowels had been slightly moved after enemata, with some relief, but the symptoms very shortly returned. Physical examination showed a fairly well nourished man with great abdominal distension, generally resonant, and tenderness, chiefly over the umbilical and left hypochondriac regions, but no tumour could be felt. Rectal examination was negative, and the urine contained no albumen. The temperature was 97° F. As the symptoms on admission did not appear imperatively to call for operation, tincture of belladonna (ten minims) was ordered every four hours, and several simple enemata were administered, bringing away a considerable amount of fæces. The vomiting, though it continued, was very slight in amount and at long intervals, and the abdominal distension, pain, and tenderness remained much as before. As, however, after forty-eight hours the symptoms still persisted, Mr. Thompson was asked to see the case, and after consultation laparotomy was decided upon.

Oct. 26th, 8.30 P.M.—The patient being under chloroform, a median incision two inches long was made below the umbilicus, and this was gradually increased, as necessity arose, to six inches. The great omentum was found to be adherent to the anterior abdominal wall in almost its entire extent, and the dissection had to be carried through that before the intestines were reached. The small intestines were found to be intensely distended, but on passing the hand into the cæcal region the cæcum was felt to be collapsed. Owing to the great distension of the small intestines almost the whole of them were gradually allowed to escape from the abdomen (and covered with hot antiseptic towels) before the seat of the obstruction could be discovered. This was found to be situated in the ileum about four inches from the ileo-cæcal valve, and was caused by a band of tissue, apparently springing from the mesentery, encircling the gut, and then attached by its distal end close to the opposite side of the mesentery. This band was divided and the constriction at once disappeared, so as to allow the visible passage of flatus along the bowel. The lumen of the bowel after the division of the band was seen to be manifestly smaller than that immediately above and below the constricted portion. The intestines were then returned with considerable difficulty and the abdominal incision sutured.

27th.—The passage of a rectal tube last evening was followed by free escape of flatus, and to-day the distension is disappearing. The man's condition is fairly good, although he is suffering from much shock. He has only been sick once and has been able to take and retain small quantities of nourishment.

28th.—Flatus collecting again; ordered Seidlitz powder every six hours; tongue dry and brownish.

30th.—Bowels have been freely moved; distension has entirely disappeared; takes nourishment well; some bronchitis, probably from position; ordered mixture of senega, and change of position every two hours.

31st.—Tongue clean and moist for the first time; bronchitis much less.

Nov. 7th.—Spurious diarrhœa. Rectal examination revealed a firm mass anteriorly and externally to the rectum, almost occluding it. This was thought to be a large hæmatoma, probably derived from the vessels of the divided adherent omentum. A morphia suppository was ordered to be given night and morning. Gradual but steady improvement went on from this date, and he was discharged cured on Dec. 6th. Examination before discharge showed the rectal obstruction to be scarcely perceptible.

Remarks by Dr. FRANK NICHOLSON.—The clinical interest in this case centred in the very slow development of the symptoms from an obstruction situated so high up as the ileum. This, coupled with a history of losing flesh for some months in a man aged fifty-nine, suggested to my mind that malignant disease situated in the colon, probably in the splenic flexure, was the most likely cause of the obstruction. This view was also supported by the partial relief afforded during the time he was under my care, the equivalent of two large motions being passed during forty-eight hours preceding the operation, and the general condition of the patient continuing very fair even up to the moment of operation, although the symptoms had existed for nine days.

Remarks by Mr. HENRY THOMPSON.—Several circumstances connected with this case call for notice. 1. The age of the patient, his appearance, and some of the symptoms naturally impressed all those who saw him with the idea that the cause of his troubles would be found to be a malignant growth, probably somewhere in or about the large intestine. I have

for some time past determined that, given the absence of a definite tumour to be made out either by rectal examination or to be felt through the abdominal wall, I would make an abdominal incision for the purpose of diagnosis, even if it had to be followed by a lumbar or inguinal colotomy. Some of my colleagues held that in this particular case colotomy was called for, and not laparotomy, but if I had followed that advice the large gut would have been found collapsed and then a further abdominal incision would have had to be made. 2. Strangulation by a band which was probably congenital is not, I believe, common in a man of the advanced age this patient was. The band was probably one of those omphalo-mesenteric bands so well described by Mr. Treves as follows: "A cord may be found to stretch from the root of the mesentery to be attached to the margin of the ileum (close to its mesentery), opposite the spot from which the diverticle most commonly arises. Leichtenstern believes that such bands represent that part of the omphalo-mesenteric vessels that extends between the bowels and the main bloodvessels at the root of the mesentery." The band was about the diameter of a toothpick, and was probably about three or four inches long. It was composed of firm, stringy material, but I am sorry to say that it was mislaid after the operation, so that its anatomical character was not made out. It is strange, granted that the obstruction was congenital, that the man had had no previous symptoms of obstruction; but I suppose that the lumen of the gut was sufficient to allow of the passage of the fæces, &c., in an ordinary way until some large substance either totally or partially blocked up the narrow channel. 3. Another fact that calls for notice was the great relief afforded to the distended intestines by the frequent wearing of the rectal tube and the free administration of Seidlitz powders as recommended by Mr. Lawson Tait. 4. The puzzling presence, as found out on Nov. 7th, of the large hæmatoma, causing again partial obstruction attended by spurious diarrhœa. 5. The recovery of the patient in spite of his age and collapsed condition.

LEEDS GENERAL INFIRMARY.

CASE OF LITHOTRITY IN A CHILD.

(Under the care of Mr. MAYO ROBSON.)

WHATEVER may be the merits or demerits of the operation of lithotrity in children it is important that all cases operated on by crushing should be reported, so that surgeons may make up their minds on the subject as to whether the successful operation of lithotomy in children should be replaced by a method said to be still more successful and conservative; hence the reason for reporting a single case, of which the notes have been furnished by the house surgeon, Mr. Oldfield.

A boy six years of age was admitted to the Leeds General Infirmary with the symptoms of vesical calculus, which had been present for at least six months. On sounding a large stone was felt. There was an elongated prepuce, and the urethral orifice appeared to be small. On Feb. 15th, 1894, with the patient under an anæsthetic, Weiss's small lithotrite was used, and the stone, which measured an inch in length, was crushed until no tangible fragment could be found. The fragments were washed out through a silver tube equal to a No. 6 catheter attached to a Bigelow's wash bottle. A second introduction of the instrument was necessary, and a final washing left the bladder apparently free from fragments. The operation lasted half an hour, and the fluid returned from the bladder was barely tinged, proving that the vesical walls were uninjured. The detritus weighed a drachm and a half. The patient had neither discomfort nor abnormal temperature after the operation and returned home within the week. The following week he was taken as an out-patient, and his mother said that he had been perfectly well and had never had the slightest discomfort since going home. He was to be taken back in case of any return of the symptoms, but so far there has been no need for further advice.

Remarks by Mr. MAYO ROBSON.—The operation was quite as easy as in the case of an adult, and the recovery being so absolutely uneventful would lead me to speak favourably of the method and to repeat it when called on to operate for stone in a child.

Reviews and Notices of Books.

A Text-book of the Theory and Practice of Medicine. By American Teachers. Edited by WILLIAM PEPPER, M.D., LL.D. Vol. II. Philadelphia: W. B. Saunders. London: F. J. Rebman. 1894.

THIS volume completes a work of great utility and of a high standard of excellence. We had occasion to speak in terms of commendation of the first volume, and can equally testify to the sound teaching and clear descriptions of disease which are contained within the volume before us. The number of contributors is not large, but it is evident that they have been judiciously chosen, whilst the name of the editor is a guarantee of the quality of the material which he has had at command. The volume opens with an extremely interesting and lucid account of the General Biology of Bacteria, Infection and Immunity, by Dr. Welch. It speaks strongly for the position which bacteriology has established for itself to find that its lessons are deemed essential to be inculcated in medical text-books. It implies further that medical education of the present day must include a sound knowledge of the general principles at least of this science, which has revolutionised the conception of infectious diseases and has at the same time made clear and comprehensible much that was previously obscure and difficult in the pathology of this important group of diseases. Dr. Welch does not enter into special detail, but has succeeded admirably in fixing attention upon the important features of bacterial morphology and bacterial life in relation to the causation of disease, and in explanation of the problems of infection and immunity. This article is followed by one on Diathetic Diseases, by Dr. H. M. Lyman, introductory to a series of articles on the different affections included under this head or allied to it—e.g., Rickets, Obesity, Saccharine Diabetes, Rheumatoid Arthritis, Gout, and Rheumatism. The following passage introducing the subject of gout may be quoted as an example of the spirit in which the matter is treated. The writer says:—

"A concise and accurate definition of gout is impossible. It is the most conspicuous manifestation of the arthritic diathesis. It is always a chronic disease, and when it is the result of hereditary causes it persists throughout the whole of life; when acquired after birth it embitters the entire remainder of existence. Once acquired, the predisposition is permanent, and the more conspicuous outbreaks of the disease are to be considered as temporary exaggerations of a peculiar morbid constitutional condition in which the nutrition of the entire organism is retarded and perverted. Gout, therefore, belongs to that remarkable group of diseases which may exist either in the same individual or among members of the same family who have derived their morbid predispositions from a common ancestral source.....It is impossible in the present state of our knowledge to explain with perfect satisfaction the nature of those errors of nutrition which determine the appearance of diabetes in one patient, obesity in another, and gout in a third.....The gouty patient often becomes the victim of obesity, while the diabetic subject may give birth to gouty progeny, which in its turn manifests now one and now another of the different diathetic diseases."

Dr. William Osler, whose name and fame as a teacher and scientific writer are so well known and appreciated in this country, contributes the articles upon Diseases of the Blood. He has himself done not a little to elucidate this difficult subject, concerning which there is still a large field open for investigation. He prefaces his discussion of the various forms of anæmia by an account of the knowledge now possessed of the constitution of the blood and the methods of examination, a coloured plate being usefully appended to exhibit the various kinds of corpuscular elements brought to light by the methods of staining introduced by Ehrlich. The subject of Progressive Pernicious Anæmia is ably dealt with, and it is instructive to learn that Dr. Osler's experience of the good effects attributed to arsenical treatment is

that they are mostly of only a temporary character. He does not himself know of any case in which the improvement was maintained for more than five years. Nevertheless, the introduction of arsenic in the treatment of this disease has modified the view as to its invariably fatal character. In a few paragraphs which precede the discussion of Leukæmia Dr. Osler directs attention to what he terms the "leucocytosis," and gives some striking details of the extreme degree and transient character of leucocytosis in acute inflammations, especially in pneumonia. Leukæmia is divided into (1) splenic-myelogenous and (2) lymphatic forms. As regards Hodgkin's Disease, he points out that its etiology is still most obscure, and that there is ground for belief that some cases of this "pseudo-leukæmia" may develop into true leukæmia. Dr. Osler also writes upon Addison's Disease and Diseases of the Thyroid Gland. The editor, Dr. William Pepper, contributes the articles upon Diseases of the Heart and Bloodvessels, and it is of interest to note that this experienced physician classifies Graves' disease with the cardiac neuroses. To Dr. J. C. Wilson are assigned the subjects of Diseases of the Larynx, Bronchi, and Pleura. The influence of micro-organisms in the production of purulent pleurisy is dealt with in the article upon Pleurisy, whilst the frequent dependence of sero-fibrinous pleurisy upon tuberculous infection is pointed out. Dr. Delafield writes upon Diseases of the Lungs, the article on Primary Lobar Pneumonia being illustrated by several charts showing the remarkable variations in the form of pyrexia that may occur in this disease. Prominent attention is drawn to the subject of induration of the lung supervening upon pneumonia, Dr. Delafield furnishing brief details of the conditions found in twelve such cases that came under his own observation. Under the general head of Tubercular Pneumonia he describes in turn Acute Miliary Tuberculosis of the Lung, Chronic Miliary Tuberculosis of the Lung, Acute Tubercular Phthisis, Chronic Tubercular Phthisis—the writer conveying within the compass of a few pages much useful information. Indeed, as compared with other parts of the work, these subjects, as well as those of Asthma and Emphysema, are treated perhaps somewhat too cursorily. Dr. Delafield also contributes articles upon Diseases of the Kidneys, following an article by Dr. Holland upon Practical Urinary Examination. The Diseases of the Digestive Organs, which complete the volume, are shared by Drs. Pepper and Fitz, and we would direct especial attention to the excellent and fully illustrated article upon Intestinal Parasites. We might dwell in greater detail upon this portion of the work, but it may suffice to point out that it is written in a thoroughly scientific as well as practical spirit. We have, however, said enough to show that this text-book is not only thoroughly up to date, but produced by writers who are known for their clinical acumen and pathological learning. Free from redundancies and theoretical disquisitions, it is pleasant and profitable to read, and will without doubt be studied as widely in this country as in the land of its production. Nor should we omit to mention that the typography and illustration of the work are worthy of the text.

Law and Theory in Chemistry: a Companion Book for Students. By DOUGLAS CARNEGIE, M.A. London: Longmans, Green, and Co. 1894.

EVERY student of chemistry who aspires to be more than a mere manipulator of bottles and test-tubes will find a definite knowledge of chemical theories absolutely essential. If he possesses mathematical knowledge and can venture among the troubled waters of physical chemistry without being carried out of his depth, so much the better; but if not, he will do well to take Mr. Carnegie's excellent little book as a chart and compass to guide him over these explorable but little explored seas. The chapters are lucid and concise, the book being singularly free from involved sentences and complicated explanations. Beginning with the history of the alchemists, the reader is shown, in a series of tableaux, as it were, the dawning of scientific chemistry. His interest ought to be thoroughly aroused, for the chapter is decidedly readable, not to say amusing, and the wonderful story of the early chemists and their struggles from among the dark places of mystery and symbolism towards light and truth will now absorb his attention. The following chapter shows how the early chemists wandered darkly through the dismal swamp of the phlogistic period, but still searching for solid ground on which to build their theories. The chapters, as the author points out in the preface, are really so many independent essays and do not pretend to cover the whole field of chemical theory; nevertheless, we think it a pity that, although it is alluded to in the next section, on chemical classification, more space was not devoted to the exposition of the "periodic law." In view of its great mportance and the service it has rendered to chemistry, the law with which the names of Newlands and Mendeléeff are associated almost deserves a chapter to itself. The essay on classification will, however, prove a wholesome corrective to the ordinary school teaching of chemistry. The futility of attempting to employ such terms as "metals" and "non-metals" &c., or to draw any hard-and-fast lines even as to the elements themselves, is clearly shown. The work of Professor Crookes and others on the rare earths is cited, and Mr. Carnegie here, as throughout the volume, keeps pace with the latest research. Next follow a history and explanation of the atomic theory and a second essay on classification. The remaining two chapters on "molecular architecture" and "chemical equilibrium" are the best in the book. Considering the difficulty of the subject they are remarkably clear. The isomerism of organic compounds, and the theories of Van't Hoff and Le Bel and others are admirably treated. Thermal chemistry receives the attention we should expect from a pupil of Mr. Pattison Muir, and the other branches of physical chemistry are not forgotten. The book is worth reading for this chapter alone. It is shown that "a *purely* chemical change is a fiction of much the same order as an *absolutely* rigid bar." The dreadful word "entropy"—the "capacity factor of the heat energy of a system," as the author defines it—seems to lose its terrors in Mr. Carnegie's description of it. Footnotes and references to original memoirs or more detailed treatises abound, and we can heartily recommend this little book to all students who wish to gain a clear general idea of chemical theory in its present aspects.

Transactions of the American Dermatological Association at the Seventeenth Annual Meeting in September, 1893. New York. 1894.

THE American Dermatological Association meets annually in some one of the numerous pleasant spots which are so easy to find in the United States. Last year the rendezvous was Milwaukee, an attractive town on the shores of Lake Michigan about fifty miles from Chicago. That the meeting was for real work as well as to promote good fellowship among its members the volume of Transactions before us testifies, the proceedings occupying some eighty pages. It contains two well-executed chromo-lithographs, one of a case of rhinoscleroma, by Dr. G. T. Jackson, the other illustrating a case of lupus erythematosus of the hands resembling lichen planus. The latter was in a paper on "Lupus Erythematosus as an Imitator," by Dr. Radcliffe Crocker of London, who was present at the meeting and is one of the half-dozen honorary members of the association, Mr. Hutchinson and Dr. McCall Anderson being the only other British members. The list of names shows that the association is highly selective in its active as well as in its honorary members. Rhinoscleroma is not shown to be

a North American disease by Dr. Jackson's case, which is the third case reported since 1877, when the association was founded. The disease in this case had been present sixteen years in a woman who was a native of Hungary. In South America—e.g., in Brazil—the disease is a native product. Another interesting case was one referred to angiokeratoma by the relator, Dr. Zeissler, though it differed in many respects from previous cases. The patient was a man aged fifty-three, of German descent, and the disease had existed for four years. The lesions affected the flexor aspect of the fingers more than the extensor, and some appeared as minute red points, and at the other extreme were tumours the size of a small hazel-nut, and there were all stages between. The older ones were warty in appearance, but of a bluish-red colour, which faded for a moment on pressure. They bled easily and profusely. There were also on the ulnar surface of both forearms reddish nævus-like patches of irregular outline, and on these were wart-like, pedunculated, firm, vascular little tumours. There were similar patches on the auricles, over the patellæ and front of the legs, and on the thighs. The feet were like the hands, but the lesions were less developed. Chilblains were not an etiological factor in the case. Microscopically, the appearances were like those of angiokeratoma, but the disease clinically was certainly very different from what has hitherto been recognised as angiokeratoma and seems in all but the wartiness to resemble the purple patches associated with gout described by Mr. Hutchinson. Dr. Fordyce read a paper on the Histology of Acne Varioliformis. The former case, which the writer had examined and described with Dr. Bronson as acne varioliformis, was now admitted to have been a case of hidrosadenitis of Verneuil; so that the present case appears to have been the first in which a lesion had been excised and examined during life. The lesion was proved to be seated at the hair follicles. Other interesting communications were a thoughtful paper by Dr. Bronson on the Treatment of Itching, in which he has endeavoured to put the matter on a scientific basis; a paper on Cosmetics by Dr. Morison, in which the writer has given many amusing historical details; a peculiar form of Tuberculosis of the Skin was brought forward by Dr. Hardaway, and a case of circumscribed cleroderma by Dr. Corlett. There were also general discussions on pityriasis rosea and pemphigus, but nothing novel was elicited. It is impossible to study a publication like this without being struck by the vigorous vitality of American workers in the field of dermatology.

The Johns Hopkins Hospital Reports (Vol. III., Nos. 7, 8, and 9). *Report in Gynæcology* (II). Baltimore: The Johns Hopkins Press. 1894.

THIS report of the department of the diseases of women is a somewhat cumbrous volume of 760 pages, most of the papers in which have been contributed by Dr. Howard A. Kelly, who is presumably surgeon in charge of the department, as most of the operations were performed by him. Dr. Kelly writes on an External Method of measuring the Conjugate Vera; Prolapsus Uteri without Vesical Diverticulum and with Anterior Enterocele (with five figures); Lipoma of the Labium Majus; Deviations of the Rectum and Sigmoid Flexure associated with Constipation, a Source of Error in Gynæcological Diagnosis (with one plate and fifteen figures); Operations for the Suspension of the Retroflexed Uterus (with four figures); the Employment of an artificially induced Retro-position of the Uterus in covering Extensive Denuded Areas of the Peritoneum about the Pelvic Floor (with seven figures); Some Sources of Hæmorrhage in Abdominal Pelvic Operations (with five figures); Traumatic Atresia of the Vagina with Hæmatokolpos and Hæmatometra (with four plates and two figures); Resuscitation in Chloroform Asphyxia; One Hundred Cases of Ovariotomy performed on Women over Seventy Years of Age; Abdominal Operations performed in the Gynæcological Department from March 5th, 1889, to Dec. 17th, 1892. Dr. M. Sherward contributes Potassium Permanganate and Oxalic Acid as Germicides against the Pyogenic Cocci; Dr. Albert L. Staveley writes, in conjunction with Dr. Kelly, on Gynæcological Operations not involving Cœliotomy; Mr. A. S. Murray describes Photography as applied to Surgery; Dr. W. W. Russel writes on Urinalysis in Gynæcology; Dr. Hunter Robb deals with the Importance of employing Anæsthesia in the Diagnosis of Intra-pelvic Gynæcological Conditions, demonstrated by an analysis of 240 cases. The volume concludes with a record of the deaths occurring in the gynæcological department from June 6th, 1890, to May 4th, 1892. The volume is in many respects a helpful one and is well printed; we hope, however, that future ones will be smaller—they might easily be made so.

Analytical Records
FROM
THE LANCET LABORATORY.

STERILISED MILK AND CREAM AND MILK POWDER.

(THE BERNESE STERILISED MILK CO., SWITZERLAND: GENERAL AGENT: ED. DE SINNER, 102, FENCHURCH-STREET, E.C.)

IF either of the above samples of milk and cream had not been satisfactorily sterilised by steam, decomposition would obviously have set in, and the space above the liquid would not have been vacuous. That the former had not occurred was evident from both samples being sweet and fresh on opening, despite the fact that the bottles were kept in a warm place for some weeks; and that the latter condition existed was obvious from the peculiar metallic sound given when the liquid was smartly shaken—a sound which is characteristic of liquids *in vacuo*. Although, owing to the separation of cream, it was somewhat difficult to obtain a uniform sample for analysis, yet the following results not only sufficiently indicate the genuineness of the preparations, but they also show how excellent the quality of the original products must have been:—Sterilised milk: non-fats, 10·00 per cent.; fat, 3·10 per cent.; mineral matter, 0·78 per cent. Sterilised cream: non-fats, 8·70 per cent.; fat, 22·30 per cent.; mineral matter, 0·50 per cent. The absence of objectionable antiseptics was also ascertained. The advantages of employing sterilised milk in the feeding of infants are well known, and the above preparation is evidently well adapted for this purpose. Both products are well suited for use, and would doubtless be highly esteemed on occasions when it is impossible to obtain fresh milk, as on board ship for example. There is, however, a peculiar "boiled" flavour connected with sterilised milk and milk products which we suppose cannot be avoided. The milk powder on analysis proved to consist largely of milk solids, with the addition of cooked wheaten flour. It contains a large proportion of soluble carbohydrate represented in dextrin, and is not lacking in mineral food constituents, and possesses a very satisfactory flavour. Its composition is in accord with the requirements of those for whom it is intended—i.e., infants and invalids.

GLYCERINE AND OIL OF EUCALYPTUS PASTILLES.

(JOHN CLEAVE AND SON, CREDITON, DEVON.)

These clear jujubes of gum arabic contain suitable proportions of glycerine and eucalyptus oil respectively, the quantity of the latter having been carefully adjusted so as not to render the jujube nauseous. No difficulty was experienced in detecting the substances indicated. The materials employed are evidently pure and skilfully combined, and free

from objectionable colouring. Both are, of course, demulcent, but additional value is afforded by the presence of an antiseptic, as illustrated in the eucalyptus pastille.

LIQUID PEPSIN, BYK.

(R. W. GREEFF AND CO., 29, MINCING-LANE, E.C.)

This is a fluid pepsin, which is convenient for the extemporaneous preparation of pepsin wine. It is an amber-coloured fluid with strong acid reaction and a somewhat disagreeable smell. It is evidently very concentrated, since when largely diluted with water it acts efficiently as a digestive upon albumen in the form of hard white of egg. It should be pointed out, however, that the solvent properties of pepsin may be, and probably are, considerably modified, by the amount of alcohol present in some wines.

COMPOUND LIME AND IRON MIXTURE, TANNIN LINIMENT, AND HAMAMELIS UNGUENT.

(ARTHUR AND CO., 74, NEWMAN-STREET, W.)

These interesting preparations may be regarded as new pharmaceutical successes. The iron and lime mixture is neutral, or only slightly acid, notwithstanding that both exist in the form of chlorides. It is free from the objectionable taste of ordinary iron salts and on heating evolves the odour of camphor. The Lin. Tann. Co. (Arthur) is alcoholic, and is evidently prepared with a trace of eucalyptus. It is intensely astringent. Lastly, the ointment, the basis of which is the excellent astringent and hæmostatic, hamamelis, incorporated with lanolin, is calculated to be serviceable in the treatment of hæmorrhoids. It should possess antiseptic and soothing properties, judging from the ingredients which we were able to recognise on chemical examination.

DOVER PALE ALE AND STOUT.

(A. LENEY AND CO., 3, BLACKFRIARS-ROAD, S.E.)

An examination of these samples was satisfactory, and we do not doubt that they are genuine malt and hop infusions. The following results of analyses were obtained:—Pale ale: alcohol, by weight 3·65 per cent., by volume 4·56 per cent.; malt extractives, 2·69 per cent.; mineral matter, 0·18 per cent. Stout: alcohol, by weight 4·75 per cent., by volume 5·94 per cent.; extractives, 3·99 per cent.; mineral matter, 0·27 per cent. Thus the ale is a light wholesome beverage, and the stout is of slightly increased alcoholic strength and possesses greater body due to higher extractives. No objectionable preservatives could be found in either sample.

CASCARA JELLY (HORSE SHOE BRAND).

(C. R. HARKER, STAGG, AND MORGAN, 15, LAURENCE POUNTNEY-LANE, LONDON, E.C.)

A clear, dark brown jelly, with a sweet taste resembling liquorice, which effectually masks the nauseous bitter flavour of cascara which proves objectionable to many individuals, and especially children. It is therefore well adapted for such, while its laxative powers are not impaired.

BRONCHI-FUME.

(W. A. MANNING, BOLDMERE-ROAD, WYLDE GREEN.)

This preparation consists, like many others, of an aromatic powder mixed with saltpetre to assist combustion. On lighting the powder combustion proceeds gently, and aromatic fumes are evolved which are not disagreeable, and which in some cases are doubtless of service in the treatment of asthma and bronchitis.

SANITAS DISINFECTOR.

(SANITAS CO., LETCHFORD'S-BUILDINGS, THREE COLT-LANE, BETHNAL GREEN, E.)

The construction of this apparatus has been improved, and the admixture of eucalyptus oil with sanitas gives advantages which cannot be gainsaid. The apparatus consists essentially of a metal cage enclosing a porous cylinder, which is fed by means of the capillary action of a wick from a bottle containing the mixture. The active antiseptic oils are thus gradually spread over a large porous and evaporating area, and the vapours evolved are of the most agreeable kind. It is an excellent device for keeping the air sweet and clean in foul places and in waterclosets.

NORFOLK FOOD OF STRENGTH.

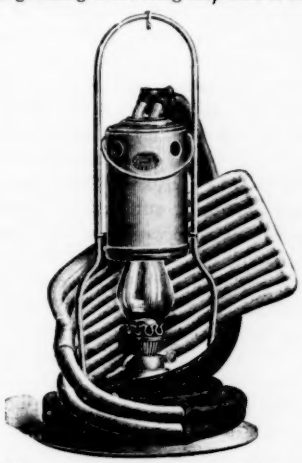
(F. GOODRICH, METHWOLD, NORFOLK.)

This preparation consists, according to microscopical examination, of a mixture of cereals with a superabundance of oat flour, the high nutritive value of which is well known. It is accordingly richer in mineral matter than wheat flour, the actual amount being 1·43 per cent., containing a desirable proportion of phosphate of potassium. It forms undoubtedly an excellent food, but, except that it is partially cooked, it is not quite evident to us in what particular it possesses advantages over good oatmeal.

New Inventions.

THE MENOTHERM.

THE menotherm fulfils the somewhat broad description of it by the inventor, who claims that "whenever and wherever steady and continuous heat is required for medical purposes the 'menotherm' will be found of the most valuable service." Briefly described it consists of a flat indiarubber pad so constructed that when inflated with water it is less than half an inch thick. This pad is connected with a small copper cylinder or heater by means of two ⅜-in. indiarubber tubes covered with a woollen sheath. The whole is filled with water and hermetically sealed. The heater is placed in a small can of water heated by a lamp. The heat of the water in the can is transmitted to the water in the heater, which circulates through the pad, the temperature being regulated by simply heightening or lowering the flame of the lamp.



The menotherm is considerably lighter than any poultice of the size, is free from the mess always attendant upon jacket poultices, and can be maintained at a steady and continuous temperature for a practically unlimited time. It is also a simple contrivance whose working can be readily understood, and will therefore be found to save much trouble. There are one or two small points to which attention must be paid. The tubes must obviously run upwards for the convection of heat. This physical fact is reassuring, for it obviates all chance of an accident with the lamp to the bedclothes. It can be understood that in a very young or delirious patient it might be necessary to fasten the pads to the patient's person. If the lamp could be and were above the pad, slight traction might pull it down on to the bedclothes; but as the lamp, fastened to its metal stand, must always be below the site of the pad, the most unrestrained movements of the patient would only separate the pad from the lamp and leave the lamp at a safe distance. When the water has reached the required temperature—probably about 110° to 120°—the lamp can be turned exceedingly low, when it will smell if not properly attended to. During the night, if the glass is made of a very dark tint, the light will be so faint as not to disturb the patient.

As will be seen, we consider the invention one of thoroughly practical usefulness.

THE LANCET.

LONDON: SATURDAY, JULY 23, 1894.

THE presentation of the report of the committee appointed to inquire into the administration of the Chelsea Hospital for Women, a substantial abstract of which we gave last week, has been followed by a special meeting of the governors on the 24th inst., presided over by Lord CADOGAN. At this it was announced that letters had been received from all the members of the medical staff resigning their appointments. This step appears to have been decided upon at a meeting of the staff summoned at the suggestion of the board of management to consider the report of the committee. The report of the proceedings at the meeting of governors on the 24th inst. leaves it, however, somewhat in doubt whether, as was suggested by one of the speakers, the members of the staff had received a hint from the board of management that their resignations would be an assistance to the hospital, or whether the decision to send in their resignations was come to independently of any such collateral pressure. To return for a moment to the report of the committee. It dealt with the statements made by Dr. PARKES under two main heads: firstly, with regard to the general sanitary condition of the hospital; and, secondly, with the mortality statistics of the patients in the hospital in 1893, with special reference to the deaths amongst those on whom operations had been performed. As regards the first point, although the treasurer of the hospital demurred to the accuracy of Dr. PARKES'S statements, and thought his comments on the state of the sanitary arrangements unduly severe, the committee had no doubt that defects did exist which might have been, and probably were, the cause of serious evil, and thought—as we do—that Dr. PARKES did his plain duty in calling attention to their presence. At the same time, however, they think that in reporting to the vestry Dr. PARKES should have made it clear that at the time his report was sent in the hospital had been empty for more than three weeks, and that he had received a letter from the secretary of the hospital informing him that the hospital authorities were about to proceed with the work necessary to put the hospital into a sanitary state, and that no in-patients would be admitted till this was done. Before leaving this part of the report we think it only right to say that, unless we are completely misinformed, the condition of the hospital had been reported on adversely some three or four years ago by an eminent sanitary authority, but that practically no notice of it was taken by the committee of management. If this be so the members of that committee incurred a very grave responsibility.

As regards the operations which took place in the hospital during 1893 we propose to enter a little more into details than we did last week. The report states that the committee of inquiry went very fully into this question, and found that 373 patients were operated upon in that year, of whom 26 died. The committee considered that 20 out of the 26 deaths were due to septicæmia or were accompanied by symptoms of septic poisoning. In view of the position taken up by Dr. FENTON on behalf of the staff in his statement at the meeting on the 24th inst., which we publish this week, it is necessary to remind him that the committee has been universally regarded as an impartial tribunal, and fully competent (inasmuch as it comprised two medical experts of the highest authority) to inform the public as to what the average mortality in the various operations under consideration actually is. On referring to the report we find their opinion stated as follows: "We cannot help observing that the mortality from ovariotomy, hysterectomy, hysteropexy, and exploratory incisions is high. That from ovariotomy, 19·3 per cent., is nearly double the average mortality after this operation. That after hysterectomy, 85·7 per cent. would, if it were general, be prohibitive of this operation, especially when it is borne in mind that fibroid tumour is rarely fatal." Unless Dr. FENTON intends to question the accuracy of the committee's knowledge as to what the average mortality of ovariotomy actually is, it is idle to seek to excuse the mortality that occurred at the Chelsea Hospital by asserting that there are other institutions where a similar mortality has occurred. No amount of black will make white. The authoritative statement of the committee on this point will, we think, be generally accepted as correct by those who are in no way personally concerned; and the opinion of the committee is, we repeat, that the mortality after operations has been high, and, in the representative instance of ovariotomy, nearly double the average. How this is to be explained is another matter. There are those to whom the fact that serious defects existed in the sanitary arrangements of the hospital will be a sufficient explanation of the excessive mortality that occurred; just as there are obstetricians who believe that defective drainage is a full and sufficient explanation of the occurrence of puerperal septicæmia. To us it appears that as regards the latter disease the evidence amounts to this: that, while defective drainage may occasion various forms of ill-health, it does not constitute a satisfactory explanation of the occurrence of puerperal septicæmia. It will be observed that the language of the report is extremely cautious in connexion with this point: "Defects did exist which *might have been*, and *probably* were, the cause of serious *evil*" (the italics are ours)—language that stops far short of saying that the defective drainage was accountable for the excessive mortality. And at another place in the report the committee remarks "that septic temperatures did not prevail in the practice of every member of the staff." Dr. FENTON'S statement invites criticism. Thus he says, speaking of the justifiability of the operations performed in the hospital in 1893, "that not a single operation had been performed that was not the common practice of the leading metropolitan hospitals doing similar work." We do not think that this is quite correct as regards the operation of hysteropexy, or fixing of the uterus to the abdominal wall to remedy displacements or prolapse. We think we are right in saying that there are several operating gynæcologists attached to leading metropolitan general hospitals who do not perform this operation, partly on the ground that they doubt the efficacy of the operation as a therapeutic measure, and partly because they

regard it as scarcely justifiable to open the abdomen for a relatively trivial disorder. To make it justifiable the mortality of such an operation would need to be nil; but the actual mortality of this operation at the Chelsea Hospital is given in the report as 22 per cent. Then as regards the "exploratory" abdominal sections, Dr. FENTON states that "not a single one was performed merely with a view to diagnosis"; but the facts that, according to the committee's report, in five out of nine such operations either no disease was found, or no organ so diseased as to require removal, seem to point either to want of care, or want of skill, or both, in examining the cases prior to operation. This aspect of the matter more especially arrests our attention as the mortality in nine such operations was 44·4 per cent.

No doubt the fact that the Hospital Sunday Fund has this year allotted nothing to the Chelsea Hospital for Women "consequent upon the very unsatisfactory condition of its wards and the public complaints made against the professional staff and general management," will still further impress on the governors the necessity of leaving nothing undone to set the hospital right with the public. The committee of inquiry were of opinion that the committee of management "failed to exercise any adequate check on the daily routine of administration," and were also of opinion that, owing to want of system, there had not been proper control of the medical staff by the managers of the hospital. In other words, they considered the committee of management partly responsible for the state of things that existed. With this we cordially agree. It appears to us that this committee must accept its share of blame, and show that it does so by the resignation of its members. The medical staff have resigned, and we await with considerable interest the result of the election of their successors, which we understand will be immediately proceeded with.

FROM public announcements which appear from time to time in various provincial papers it seems clear that, whilst on the one hand there is a desire to utilise the Infectious Disease (Notification) Act for the purposes of controlling measles, there also prevails on the other hand much doubt as to the utility of so doing. Whilst some sanitary authorities are procuring sanction to the inclusion of measles within the list of notifiable diseases, others are announcing that they have revoked the order making such inclusion compulsory. This can hardly be regarded as a satisfactory state of affairs, and several medical officers of health of large boroughs have somewhat recently made efforts to discover what has been the actual result of making measles a notifiable disease before coming to a conclusion whether they should recommend similar action within their own districts; and the outcome of the several inquiries leaves us very much where we were before they were made. A few medical officers of health find that the notification of measles is a valuable means for the purposes of public health, but a larger number imply that the notification of this disease has done little more than lead to a considerable expense in notification fees without any corresponding benefit. Some two years ago it was announced that the Local Government Board had commenced an official inquiry into the same subject, but we understand that the inquiry had to be provisionally abandoned owing to the advent of cholera in the autumn of 1892, and that it is hardly likely to be resumed until the state of public health on the continent of Europe is such that the Cholera Survey, which has now been for some eighteen months in continuous operation, can with safety be relinquished.

Pending some authoritative decision on the point at issue there are a number of considerations which sanitary authorities may well hold in view in coming to a decision whether they should apply to the central authority to have measles included in the list of notifiable diseases. There are some points which are adverse to such action. First and foremost is the difficulty of inducing the bulk of parents to regard measles as a dangerous disease which ought to be avoided as much as any other preventable affection. Next comes the rather formidable difficulty that the disease is somewhat insidious and trivial in its early symptoms and that it is highly infectious before a stage has been arrived at in which it is commonly recognised. Then there is the further difficulty that it is largely a disease of infancy, and that the patients are commonly so young that it would be impracticable to isolate them in hospital because such action would involve their separation from their parents at a period of life when such separation would be resented and when it could hardly be contemplated to effect it by resort to compulsory measures. These are among the common arguments that have long been raised against making measles a notifiable disease; but within recent years another has been added. We are assured on the part of a number of authorities that the practice of notifying this infectious malady has not been productive of any material good.

There are, however, a number of arguments in the opposite direction. It is very properly contended that measles, though often trivial, is one of the most fatal of our endemic infectious diseases and that the large mortality which it causes should not be allowed to proceed unhindered; and, so far as the apathy of parents is concerned, it has been noticed by some health officers that notification brings it home to parents that even in this disease there is something to be done by way of precaution, and the educational value of this is by no means unimportant. Isolation in hospital can hardly be contemplated on any sufficient scale, but there is another form of isolation which ought always to be attempted—namely, that of prohibiting the attendance at the elementary schools of children who are inhabitants of houses where measles prevails. The argument that the disease is infectious in its earliest stages ought not to be allowed to weigh against such action; it might almost equally be applied to the infectious sore-throat that prevails so commonly in connexion with diphtheria. Short of notification, nothing can well supply the needed information on which to base a system of exclusion from school in the case of either disease. It is true that notification by the parent, which has always been a dead letter, would have to be insisted on if complete information were to be obtained; but this argument also applies to the numberless cases of infectious sore-throat to which we have already referred; and yet no one could suggest that for the purposes of school

restrictions the notification of diphtheria and of membranous sore-throat has been valueless when the information thus acquired has been properly utilised.

The truth is that it is much more difficult to make a proper use of knowledge acquired by the notification of measles than is the case with the ordinary notifiable affections, and for this reason authorities should not adopt it unless they are prepared to undertake the additional work which devolves upon them in consequence. Very commonly the notification of measles is adopted in a sort of panic, at the very moment when the least good can result from it—namely, after the disease has become widely epidemic. The result is that the medical officer of health is flooded with a fresh group of certificates, he has no increase of his subordinate staff, who should immediately visit every affected house, forbid attendance at school, and communicate accordingly with the school authorities, and the outcome is that the only result which seems to have been obtained is an increase of notification fees.

Sanitary authorities should not ask for the requisite powers to include measles amongst their notifiable diseases unless they are prepared to do at least two things. In the first place they should maintain the system of notification through a non-epidemic period, so that they may by the incoming certificates be at once made aware of any increase in the disease. This is the time, almost the only time, for really useful action. In the second place, after having made arrangements for acquiring the information which the system of notification affords, they should also make arrangements which will enable them to utilise it; and this almost necessarily means an increased staff with a view of controlling attendance at the elementary schools, so that these shall not serve as centres for the diffusion of the infection. Disinfection of infected rooms and articles of bedding and clothing should also follow. Where these two conditions are not fulfilled the notification of measles is practically little more than a useless expenditure; where the information is strictly and regularly utilised in the directions we have referred to it has been found of value: and it is very largely the adoption of such action or the failure to adopt it that has determined the difference of opinion that has been expressed as to the value of making measles a notifiable disease.

WHEN the Contagious Diseases Acts of 1866 and 1869 were repealed in 1886 the various governors of all the Crown colonies in which similar Acts were in force were required to show that the interests of the colony imperatively required the continuance of these laws. As was recently stated in THE LANCET the Maltese Government maintained that, so far as the island of Malta was concerned, their ordinance, which was much older than the English Acts, was imperatively required in the interests of that colony, and the motion for repeal was defeated by a substantial majority. Hence the Acts are still in force in Malta, and, we believe, also in Simon's Town, Cape Colony, South Africa. With these exceptions the repeal of the Acts in the colonies was general and absolute; but very strong protests against such repeal were made by most of the colonial governors, and by none more strongly than by those of the Straits Settlements. It is important to bear in mind the geographical situation of this part of her Majesty's colonies. It comprises Singapore, Penang or Prince Edward's Island, with Province Wellesley and the Dindings, and Malacca, from the Straits of which it takes its name. The colony has an entire area of about 1472½ square miles. Sir F. A. WELD, who was the Governor in 1887, wrote: "I have only to express my own concurrence in the opinion of the majority of the executive council that it is not advisable to interfere with the existing law." He enclosed a report from Mr. PICKERING, then the Protector of Chinese, which was of a most exhaustive character, and from which we give a few extracts. "Prostitution in the Straits is chiefly supplied from the following sources. ..... Girls purchased when very young by procuresses or brothel-keepers, and brought up carefully for the purposes of prostitution; these are absolutely the property of their owners, chiefly women whom the girls call 'mother' and whom they regard as such. The mistress brings her girls down to the Straits, and either sells them or takes them from place to place, lodging them in licensed brothels, where she resides, nominally a servant, but receiving the earnings of her girls and paying a commission to the licensed keeper. ..... I have never had any liking for legislation for the regulation or encouragement of vice, and would not have accepted the registrarship unless I had seen that the ordinance was the only possible way of ameliorating the sad condition of the prostitutes in the colony; the law bears hardly on no person except on the classes of procuresses and brothel-keepers, who make money out of the suffering and slavery of helpless Chinese girls, and, as it is now worked, it is an unmixed good to the unfortunate victims of their greed. ..... I do not pretend to know the condition of prostitution in England, but to any person who accepts as true my report of the state of things in this colony I cannot see how there can be any valid objection, philanthropic or religious, against the medical examination of poor girls who, through no fault of their own, have been purchased for and forced into a life of prostitution, and who know no better mode of life and for whom no better is, as a rule, possible. The time spent in the hospital is most favourable for the girls learning something better, and it is from the hospital that girls, when cured of their special diseases, are sent back to their homes in China by order of the medical officer when he finds that they are physically unfit to be prostitutes or that the climate does not agree with them. I myself profess to be a Christian, and endeavour, according to my light and as far as my nature will allow, to conform my conduct to the standards of my religion. While holding these principles I certainly feel that I should not be acting in accordance with the wishes of our Master were I not to advocate most strongly that healing should be extended to the poor, the helpless, and afflicted, whether they be harlots or any other kind of sinners, who, unless the Government assist them by forced examination, will suffer and often die in misery from the want of medical assistance."

Mr. PICKERING was amply confirmed in the views which he held and expressed so forcibly as to the value of the compulsory examinations by the medical officers and others whose official position made them competent to judge what

their discontinuance would involve. Sir C. C. SMITH (who succeeded Sir F. A. WELD in the governorship), writing towards the end of 1887, states: "The inmates of brothels are certainly free agents in the sense that they are not under physical duress. They can go in and out of the brothels as they please. They can and do go for assistance or advice to the Protector of Chinese or the police. But their actions are subject to a moral force exercised by the keepers of the brothels which it is not in the power of any British agency, working under English principles of administration, to overcome. Hereafter when an inmate of a brothel is sick there is every reason to expect that she will be put under the charge of a Chinese quack doctor, not in the brothel, where she is liable to be seen by the inspecting officers of Government, but in some private house where, if the disease has taken strong hold of her, but one result will follow. It will be absolutely useless, so far as any good will result, to tell the keeper and the inmates of brothels that the hospital is free to them. The inmates will do exactly what the keeper directs them to do, and the keeper, who is generally in the hands of the head men of the secret societies, who are the very worst members of the Chinese community, will most certainly have nothing to do with the medical officer of Government, who will be looked upon chiefly as another agent to lure away the prostitute from the life she is leading with such profit to her owner. ..... It is in every respect futile and, I venture to submit, not in accordance with a wise and sensible administration to look on this question from the standpoint of Western ideas and principles. To do so is to be in advance of, not one, but several generations, and in the meantime incalculable harm is done to unoffending individuals. ..... The women in brothels are in the position of daughters of the keepers ..... there is no sense of freedom, as we understand the term, possible in such a state of affairs. ..... It is out of the question to educate them up to the English standard of liberty of the subject. It is unknown in their own country. They stay but a few short years in an English colony, seeing nothing but the worst phases of a life of vice and immorality, and only know the officers of Government as 'foreign devils' or 'barbarians.' No Protector could make these unfortunate women understand that they are free agents, and, if they did understand, act as free agents, and against the will of their keepers go to our hospital of their own accord for medical treatment." Sir C. C. SMITH concludes his letter with the significant sentence: "You may rest assured that everything will be done to ameliorate the condition of the women, although this Government considers that their principal safeguard has, under your instructions, been removed."

Notwithstanding all these strong protests the Acts were repealed. The results will be seen in the paper by Mr. R. W. EGERTON EASTWICK, late sheriff at Singapore and magistrate of Penang, published in another part of this issue. Mr. EASTWICK is careful to avoid the exaggerated tone into which laymen are apt to fall when dealing with the subject of venereal diseases. His paper is carefully put together, and he fortifies himself throughout with extracts and statistics from the medical officers' reports, which fully confirm the apprehensions expressed in the extracts already given as to the probable effects of abolishing the compulsory examinations. We have on previous occasions observed when dealing with the Acts in India that with the native women of that country the question of prostitution is one of caste, and that the daughter of a prostitute has no other calling open to her. In China the condition of native girls would appear to be even worse, and it is impossible to contemplate calmly their being left to men and women whose sole object is to live on their "wages of shame." While the terrible increase of disease, and especially of syphilitic diseases, is to us the most interesting feature of Mr. EASTWICK'S paper, we have not ignored the humane consideration shown by all the officials, from the governors downwards to the humblest, towards the unfortunate inmates of the brothels to and from whom the diseases are spread. We can only echo Mr. EASTWICK'S concluding words, and hope that some effort will be made "to protect the innocent, to assist the helpless, and to devise means for subjugating this terrible scourge of disease, which in its effects is much more deadly than drink or opium, more cruel than man, more crushing than slavery, and more demoralising than vice."

As most of our readers know, Mr. Justice CHARLES had the action of BRASYER v. HARNESS and Another recently before him. In it the plaintiff, Colonel JEREMIAH BRASYER sued Mr. CORNELIUS BENNETT HARNESS and Mr. JAMES MONTGOMERY MCCULLY for damages for negligence and fraudulent misrepresentation in the course of treatment undergone by him at their hands in connexion with the notorious Medical Battery Company. The defendants made separate defences, and Mr. MCCULLY was able to satisfy a jury that he had made no misrepresentations to induce Colonel BRASYER to part with his money and had not been negligent in his treatment. He was also able to put it on record that he had not been struck off the Register for professional misconduct, but because he had libelled a lady on a postcard and had received two years' imprisonment—the maximum term for the offence, as Mr. Justice CHARLES pointed out. Mr. HARNESS was not so fortunate. The jury, it is true, acquitted him of negligence, but they were unable to decide whether Colonel BRASYER had been induced to part with his money by fraudulent misrepresentations. And here the matter lamely and impotently ends, unless Mr. HARNESS should make some attempt to escape from his present position.

This position we should like to dwell upon, for it illustrates in a remarkable way the immunity which blatant quackery still enjoys among us. Mr. HARNESS has been compelled to admit that he has undergone no scientific education but only the commercial training of a salesman. This has been publicly said of him for years. He has studied neither, medicine nor electricity, and he did not write the book of electric treatment which bears, or bore, his name, and in which the words, "I have successfully treated many of these diseases," occur. As a matter of ancient fact, no one in the least read in these subjects ever suspected him of ought but ignorance. His methods have met with public reprobation, in trying to combat which he has been singularly unfortunate. As far back as January, 1889, it was pointed out in THE LANCET that the Medical Battery Company, Limited, or Electropathic and

Zander Institute, was not a respectable professional institution, and was not conducted by persons of recognised standing in the medical profession. For this expression of opinion—which has since been found to have been at least no exaggeration—the company brought an action against us and claimed £5000 for damages for libel. That action was discontinued by the company, who had to pay our costs. The Medical Battery Company has since then been twice involved in litigation with the *Electrical Review*. In the first instance the company as plaintiff claimed damages for libel, and the action was discontinued and the costs of the defendant paper paid by the company. In the second the *Electrical Review* brought an action for libel against the company and recovered £1000 damages. In 1892 the company brought an action against *Science Siftings* for libel, but that paper counterclaimed for damages, and in the result the company paid the defendant paper £1000 and costs as between solicitor and client. All these misfortunes bore directly and with great publicity upon Mr. HARNESS'S reputation, for we have it from himself that his personality has been so closely identified with the company that it has been necessary for him to put his name as author to certain publications without going through the preliminary form of writing them. With the public it was HARNESS or nothing. Lastly the *Pall Mall Gazette* has called him opprobrious names, which he has quietly borne. This, he says, is because the owner of that journal is a millionaire, to fight whom would mean ruin; but the plea, surely fundamentally ridiculous, becomes especially so when we remember that Mr. HARNESS did not fight to the issue with *Science Siftings* because in that case, according to him, his opponents were not millionaires. And now, in the suit of BRASYER *v.* HARNESS and Another (to contest which he states that he abandoned proceedings against the *Pall Mall Gazette*) a jury cannot agree whether he has obtained money by fraudulent misrepresentation or not. This, as we have said, is a lame and impotent conclusion to an enterprising career; and we leave the personal side of the subject willingly to draw from the evidence the general moral we have already indicated.

The quack enjoys an immunity, not only from punishment but from criticism, which is little short of remarkable in these days of a high general level of education, accompanied presumably by a proportionately well-developed acumen. The public does not seem to grasp the fact that medical advice can only be well worth having when given by persons who have received a medical training. It is sufficient for the expositor of a treatment or the possessor of a nostrum to loudly claim for his system or his wares the power of universal remedy for the public to endorse the claims. If only colossal fortunes are spent in assuring the public that a worthless appliance or an ineffective, if not mischievous, preparation will remedy the irremediable and cure the incurable, colossal returns appear ensured, at any rate for a time; even though, as in the case of the Medical Battery Company, the bubble bursts later. The evidence given in this case shows an expenditure of £200,000 in five years upon advertising alone, and although this sum represents the most profuse dissemination of falsehood but two or three papers were found to point out the inaccuracies, and these, being medical or scientific—that is, being the only papers likely to know exactly what they were talking about—were supposed to have been actuated by tainted motives of self-interest. Is no remedy possible? We know that legislation will always be powerless to protect the buyer of the quack remedy entirely from his folly and its consequences. And *caveat emptor* is a fine business motto, expedient if immoral. But the time has come when the present licence of the quack should surely be restricted and when many of his methods should be visited with penalties. There are three divisions of the community whom all civilised nations conspire to regard as fit objects of peculiar care—their women, their children, and their sick. Of late years the women and the children have received some measure of particular attention. The turn of the sick has arrived.

Annotations.

"Ne quid nimis."

"COVERING AND THE EMPLOYMENT OF UNQUALIFIED ASSISTANTS."

THE General Medical Council pays a subtle compliment to the medical press in assuming that every registered practitioner reads THE LANCET or some other medical journal. We should be sorry to think that there is any benighted practitioner who neglects this obvious duty. Yet the experience of the members of the Council is that at every meeting one or more practitioners come before them completely ignorant of the resolutions of the General Medical Council on the subject of covering &c. published in the reports of the proceedings of the Council. We will charitably assume that these gentlemen are so busy as to be able to read only the most urgent part of the medical journals relating to the science and practice of their art. But it is necessary to emphasise the fact that the General Medical Council has spent much time on this subject and has passed some very important resolutions. Not only so, but it has, by special resolution at its late meeting, instructed the Registrar to publish annually in a prominent place in the medical journals the resolutions of the Council on this subject, and to supply a copy of them to every person applying for registration. We should have thought that such a publication should have been made more frequently. Be that as it may, the resolutions are published in our columns to-day. Every practitioner should study them and keep a copy of them, for they contain all that there is to guide him in avoiding the offence of covering or wrongfully employing unqualified persons. As we have anticipated the Registrar's action in this matter, and dealt with the subject at some length,[1] we need do little more than direct our readers' attention to that article and to the resolutions which are to be found on the subject in our present number. For the offence of medical practitioners enabling unqualified persons to practise under cover of their names and qualifications there can be no excuse. The use of unqualified assistants under the immediate direction, supervision, and responsibility of a registered principal is another question. It is, indeed, permitted, but it is only permissible where personal control and supervision are practicable. It is assumed, too, that such persons have had more or less training. It is for every medical man to note the highly conditional terms on which alone the use of such unqualified persons can be sanctioned by the Council. It would be well for all persons concerned to take notice that in the view of the Council the

[1] See THE LANCET, July 14th, page 86.

proper position of an unqualified assistant is that of an advanced medical student requiring the experience to be gained under a registered practitioner in general practice as a part of his medical education. All other conceptions of medical assistantship must necessarily be discouraged by a Council which has to promote medical education and to uphold the right of the public to be treated by persons who are registered.

MR. GLADSTONE'S EYESIGHT.

WE are authorised to state that a careful examination was made of Mr. Gladstone's right eye on Thursday, the 19th inst., exactly eight weeks after the operation for cataract. The eye is, and has for some time been, strong and quiet. In the earlier period there was rather more than the usual ciliary redness, and for a short time at about the end of the first week there was some threatening of inflammation of the iris; the pupil, however, dilated promptly and widely under the influence of atropine, and no iritis occurred. Though the lens was hard and came out easily, the pupil is now sufficiently obstructed to render a needle operation necessary sooner or later, the operated eye being in its present state somewhat less useful than the other. With the other eye, which is affected by immature cataract, Mr. Gladstone can still, with the aid of a weak solution of atropine, see to write and to read good print moderately well. Mr. Gladstone is remarkably well and very vigorous, but he is troubled with an occasional slight return of his old ailment if he walks too much.

THE DIFFUSION OF SMALL-POX.

THE usual seasonal decline of small-pox is now being witnessed in London, the records for the past fortnight having been indicative of a waning prevalence. Last week only 13 cases were heard of, and but one death was registered—namely, in Bethnal Green. The number of patients in hospital shows considerable diminution, there being only 69 persons under treatment in the hospitals of the Metropolitan Asylums Board last Saturday, and other 10 in the Highgate Small-pox Hospital, making a total of 79, against 132 three weeks earlier. In West Ham the disease has now for some time practically ceased to exist, the cases newly arising being from week to week very few in number. Small-pox has been imported into the High Beech district of Epping Forest by haymakers, one patient having been found in a barn sleeping with some thirty colleagues, these having since been isolated lest they should have become infected; but no fresh case seems to have developed. In default of local provision for the isolation of the sick, the two patients have been removed to the metropolitan hospitals. Southward and westward we hear of the disease at Southampton, at Bristol, at Gloucester, and at Devonport among other places, but in small amount only. In the midland districts there was a single attack at Walsall and 4 at Wolverhampton, the same number at West Bromwich, and 18 at Birmingham. In the week preceding 2 cases were recorded at Blackheath and Tividale, both being removed to hospital; and 6 patients remained under treatment at Wednesbury, 2 unvaccinated patients having died of small-pox. At Willenhall the medical officer of health reports that in the three months ended on June 30th there were 501 cases of small-pox in the town, with 20 deaths, 471 of the attacks being over five years of age and 12 of the deaths being in unvaccinated persons. In the first fortnight of July there were 85 fresh attacks and 23 removals to hospital, this serving to show that numerous patients are still treated at home. One death in the institution had occurred in the two weeks, and 3 at home. It has been decided to levy a rate of 1*s.* in the pound to cover the expenses incidental to the cost and maintenance of the hospital. This decision appears to indicate that there are grounds which bar the way to the obtaining of a loan by which the cost could be spread over a number of years. It is interesting to know that of 3350 persons vaccinated and revaccinated as a consequence of the small-pox epidemic at Willenhall, 3342 have escaped the disease, and that of the eight persons who have suffered, only in one case was the disease manifested at a later date than twelve days after performance of the operation, this case, moreover, being a very mild one. Stockport continues to record a few fresh cases weekly, and further north Manchester had 11 attacks to report last week. Oldham had 1 death and 1 or 2 cases. Preston was also again invaded. In Scotland a case was discovered in the lower parts of Greenock a fortnight ago, the patient having returned from a visit to Leith; and quite a scare has been caused at Hawick by the influx of about 1000 excursionists from Leith, who, moreover, under the erroneous impression that all the shops were to be closed on account of the fear of importation of infection, brought their own provisions. A recruit of the Royal Scots Militia, in camp on the Barry Links, was some days ago found to be suffering from small-pox, and has been placed in a tent outside the regular quarters, and his six tent companions have been placed under observation.

LONDON BAKEHOUSES.

THE regulation of London bakehouses has been again under the consideration of the London County Council on a further report by the Public Health Committee. The Council had at a previous meeting decided that the licensing of bakehouses should be in the hands of the district authorities. The committee now pointed out that, while accepting the proposal that these authorities should enforce regulations to be made by the Council, they thought the making of regulations and the licensing of bakehouses should devolve upon the Council. This view was accepted, and the previous decision of the Council in this respect was reversed. Proceedings have been instituted against the occupier of a bakehouse in Pocock-street, Southwark, by the vestry of St. George the Martyr. Evidence was given by Dr. Waldo that the floor was uneven, defective, and formed of brick, stone, pieces of wood, and so arranged that injurious ground air was admissible by aspiration by the heat from the oven furnace; there was no damp course in the walls. The ventilation was through an iron grating, measuring 2½ ft. by 10 in., forming part of the footway and admitting street dirt and flies; further ventilation was secured from the back yard through a window measuring 2½ ft. by 2 ft. Inasmuch as the vestry had no power to apply for a closing order, the magistrate was asked to impose a fine, which might be repeated if the defendant did not choose voluntarily to close his bakehouse. Dr. Waldo is reported to have pointed out that the Act imposed the cost of making the necessary structural alterations upon the occupier, and ont upon the owner, as was the case in other insanitary property, such as dwellinghouses. The magistrate fined the defendant 20*s.* and 2*s.* costs.

THE VIEWING OF BODIES.

IN an annotation in THE LANCET of July 14th we referred to the trenchant remarks of Mr. Oliver Pemberton, F.R.C.S., the city coroner of Birmingham, respecting the compulsory viewing of bodies upon which inquests are about to be held. We now again refer to the subject in consequence of what took place at an inquest held by Mr. Brighouse, one of the coroners for Lancashire. The inquest was on the body of a collier who had been killed in the saw-pit of Lea-green Colliery, near St. Helens. On the arrival of the coroner at the place of inquest Sergeant Small informed him that the jury had been unable to view the body, as owing to the frightful stench it had been screwed down in the coffin. The coroner said that the coffin must be unscrewed and

that the jury must obey the law and view the body. After the jury had been sworn the coroner, addressing them, said: "As he understood, a neighbour of the deceased had screwed up the coffin, and when they went to the house they were unable to view the body. The jurors of South-west Lancashire knew his views on the subject; they had his full and complete sympathy. They knew very well that the view they were now going to make would not do them any good and would not help the inquiry in any shape or form, and was of no practical use." He said, further, that some change in the law ought to take place at once, so that viewing of the body should only take place when necessary. If it had been an infectious case he should have been tempted to break the law; but it was not. They would be obliged to carry out the law and he would go with them, and if they made a view he would be quite satisfied. He did not want to compel them to do anything that was obnoxious to them; but he would be doing wrong if he broke the law. A juror said the law ought to be altered. This must have been a very objectionable viewing—even worse than viewing some bodies that have died from infectious diseases—and it could be of no use. It is only by constantly calling attention to this disagreeable part of a juror's work that we can hope to get it removed. Surely a viewing by the coroner himself or of his officer would meet every requirement as to the inquest being held on a dead body.

THE SANITARY STATE OF EGYPT AND THE NILE RESERVOIRS.

SIR W. T. MARRIOTT has lately called attention to the sanitary condition of Egypt in the pages of our contemporary the *Pall Mall Gazette*, and the public are likely to concur generally in what he has to say on the subject. As far as nature is concerned she has been prodigal in the gift of a climate which should make Cairo and Egypt generally a first-rate health resort as well as a most interesting and pleasant country for tourists. Man has, on the other hand, done but little to improve and much to diminish, if not to destroy, these climatic advantages. It would be a thousand pities if England should leave Egypt at the end of her occupation no better in this respect than when she entered it; and yet, according to the report of Rogers Pasha, the Director-General of the Sanitary Department, Egypt in its general sanitary condition remains as it was ten years ago. Not a town has been drained; polluted water and soil, overcrowded and insanitary towns, villages, and dwellings remain exactly the same as they were; and it must not be forgotten that these are just the conditions most favourable to the propagation of epidemic disease; and Egypt, considering her geographical position in relation to the East, and especially to Mecca and its pilgrimages, may be said to be always threatened with cholera. There is no denying that England has done immense things for Egypt, but notwithstanding that England stands in the first rank in regard to her own practical sanitary legislation and administration, she has hitherto neglected her responsibilities and opportunities in Egypt in these respects. No doubt the task presents great difficulties in that country as regards sanitary engineering, the opposition of the Capitulations, finance, and the ignorance and indifference of the population to all matters of hygiene, but the question of expenditure in the direction of sanitary works and improvements should surely have some consideration as well as the question of finding the funds for throwing a dam across the Nile and constructing an enormous reservoir. It must be remembered that the present able head of the Egyptian Sanitary Department does not stand alone in his representations; his immediate predecessor and Dr. Sandwith of Cairo have laboured in the same direction. As regards the proposed site of a high-level dam at Assouan and the submergence and destruction of the various temples of Philæ and the villages, cemeteries, and various other remains of this region, the matter is one of extreme interest, no doubt, to *savants*—to the Egyptologist, the archæologist, and the antiquarian—but if it could be shown that it was the best and cheapest scheme for the country, and that the material prosperity of Egypt really depended upon its being carried out, then it seems to us that the æsthetic and historical sentiments of *savants* and archæologists must be sacrificed. But that is just the point of contention at present. As the representatives of Art, Science, and Literature in this country point out to the Earl of Kimberley, there is at least one feasible alternative site, and if equal benefits can be otherwise obtained for the same cost, with the additional merit of sparing the threatened temples, then unquestionably there should be no hesitation in the matter. Egypt has managed to do without a reservoir for several thousand years, and there does not consequently appear to be any hurry about providing one now, although we do not doubt for a moment that a work of the kind would confer great benefits on the agricultural and industrial classes of the country. There is plenty of time for making an exhaustive investigation of the subject and for ascertaining at the same time whether some scheme might not also be designed for the sanitary improvement of the country.

DANGEROUS CISTERNS.

A REMARKABLE instance of chronic poisoning from a source which remained for four years undiscovered is related by Professor Axe in a paper read by him before a recent meeting of the Central Veterinary Medical Society. Symptoms of poisoning, unmistakably like those of lead poisoning, had prevailed amongst a stud of valuable horses, and the effects amongst the yearlings were so serious as to interfere with successful breeding. All endeavours to trace the source of mischief in food proved futile, and no suspicion of the water was entertained as it was rain-water conducted from the roofs of the stables to a wooden tank by a large iron pipe. It does not appear from the *Times*, in which the case is reported, whether the water was submitted to chemical examination. We imagine, however, that this course would be the first thing to suggest itself; otherwise, it would be a very serious fact if it were shown that the ordinary methods of chemically testing for lead had failed. An examination of the surroundings carried the conviction that there was no possible external source of contamination with lead; but at length attention was directed to the storage tank, which, however, seeing that it was constructed of wood, gave little hope of furnishing a clue. But in viewing all the facts the conclusion forced itself upon the puzzled investigators that the *fons et origo mali* must be in the cistern. This surmise was correct. A large quantity of a dull-white substance resembling putty, which had most probably been used to make the spaces between the walls of the cistern water-tight, was found in the joinings of the tank, and proved to be largely composed of white lead. The black sediment which had previously been removed, and which consisted mainly of decomposing leaves, was also found to contain a considerable quantity of lead. Apart from the important legal aspect of this case concerning the suspicions which occasionally arise in connexion with the malicious tampering of racehorses, it is one also of far-reaching importance from a medical and general point of view. It illustrates how, by zealously taking precautions to stop a possible source of mischief in one direction, a second and more serious, and frequently unforeseen, source is introduced in another. Thus wooden and slate tanks are recommended to avoid the possibility of metallic contamination, but white lead may be used to caulk the seams of these, and then the object of effecting a sanitary improvement is

more than defeated, and a new and more insidious evil arises. The case is important, further, in illustrating the readier solubility of lead in water containing organic matter, such as decaying leaves. Whatever the solvent action may be due to—whether an organic acid or the carbonic acid evolved during the disintegration of the leaves,—it is evident that the adoption of non-metallic cisterns in the place of lead or zinc gives no security against the possibility of metallic poisoning unless lead or similar metallic compounds used for making the joints tight are also rigorously excluded. The conditions giving rise to the source of mischief just indicated may so easily occur that it would be well if an inspection of non-metallic cisterns could be made with the view of discovering whether an objectionable "stopping" has been used. The preclusion of such "stoppings" must be insisted upon. The whole case obviously affords another argument in favour of the abolition of cisterns and the adoption of a direct supply.

AMPUTATION WITHOUT PERMISSION.

A LAWSUIT lately took place in Germany in which the father of a girl aged seven years charged a hospital surgeon with assault—to wit, "wounding with a dangerous instrument." The patient was under treatment for tuberculous disease of the foot. Conservative methods of treatment having failed amputation was advised, but the father refused to give his permission. From a report in a contemporary it appears that the parent proceeded to the institution with the purpose of taking his daughter away, but when he arrived she was under the influence of an anæsthetic which had been administered with a view of amputating the foot. The surgeon in charge, on being apprised of the purport of the father's visit, is said to have remarked, "It is too late," and proceeded to amputate. There can be no doubt, if he was aware of the father's objection to the operation, the course he took was wrong both on legal and ethical grounds. Where a mutilating operation is necessary to ward off impending peril of death, it would be absurd to have to wait for permission to resort to it, but in the case under consideration no such circumstance can well have arisen. The liberty and rights of the subject cannot be allowed to be overridden. Nevertheless, there may be much to extenuate the offence, and we cannot imagine greater mitigation than where there is conflict between a surgeon's judgment and a parent's feelings. The surgeon in question was acquitted, but it is said the cause is to be re-tried.

THE PREVALENCE OF ANTHRAX IN LONDON.

A REPORT on the subject of the prevalence of anthrax, especially in the Bermondsey tanyards and in connexion with the foreign hides trade, was recently made to the London County Council by the medical officer, Mr. Shirley Murphy. It is based on an inquiry instituted by Dr. Hamer, the assistant medical officer, which is of no small interest and importance. Dr. Hamer's inquiry supplements that conducted by the late Mr. Spear of the Local Government Board in 1883. Although more cases have been recorded in London since that time than before it, yet that there has been an actual increase is more than doubtful, the fact being that anthrax is more readily recognised; indeed, since the date of Mr. Spear's report there has been only one case of internal anthrax reported in London. Perhaps the most valuable point in the whole report is the demonstration of Dr. Hamer of the decrease in cases in the tanyards owing to the growth of the practice of employing wet hides instead of dry hides, the latter being far more prone to carry infection. On the other hand, the disease is just as prevalent amongst the sorters and labourers in the hide-brokers' warehouses, where dry foreign hides are manipulated. The need for the dissemination amongst the workmen of the knowledge of the risks involved in the trade, which was impressed by Mr. Spear, is endorsed strongly by Mr. Murphy and Dr. Hamer. In an appendix to Dr. Hamer's report there is a table giving particulars of 118 cases known to have occurred in London since 1873, and it is noteworthy that a large proportion of these, especially in the earlier years, were treated at Guy's Hospital. Of the whole number, 90 were in persons engaged in the hide and skin trade, 5 in persons engaged in slaughtering animals, 7 in persons engaged in the manipulation of horsehair or the manufacture of brushes, one was employed at a bacteriological laboratory, whilst in 15 instances the source of infection was not traceable. The growing diminution of the disease in the tanyards is shown in the fact that of 37 cases mentioned by Mr. Spear (years 1873—1883) 12 were in tanners; whilst of 53 cases noted by Dr. Hamer (1883—1893) only 3 were in tanners. Each series shows, moreover, a preponderance amongst those persons engaged in manipulating hides before their removal from the brokers. "In almost all the cases the hides incriminated have been dry hides," and it is probable, in the two instances in which infection may have been through wet hides, that it was not really so, as the workers who were attacked may also have been in contact with dry hides. Another reason for the decreasing number of cases from the Bermondsey tanyards is to be found in the diminution in the number of these tanyards of late years and also in the tendency to deal more and more exclusively with English hides. Finally, the fact that in the trade wet hides are replacing dry hides encourages the hope that there will be a diminution of infection—a result which would be even more certainly secured could the hides be subjected to disinfection before export. The importance of early intervention in treatment by excision of the malignant pustule is also urged as a strong reason for educating the workpeople in the nature of the risks run in their trade and in the recognition of the signs of infection.

THE BRIGHTON SANITARY COMMITTEE.

THE sanitary committee of the important borough of Brighton has recently presented to the ratepayers of the town and to the public generally a spectacle which is far from elevating. There has, it appears, been a very serious difference of opinion among the members of this committee as to the procedure to be adopted in reference to some meat which had been condemned by their able medical officer of health, Dr. Newsholme. The meat was seized and ordered by a magistrate to be destroyed, but the town clerk refused to prosecute the owners of the meat without the sanction of the sanitary committee. When, however, this body was consulted they declined to take proceedings, and on reference to the town council their attitude was supported *in camerâ* by 22 votes to 18. From the reports that have reached us we learn that five members of committee have resigned their seats. One member in referring to his resignation states, in reference to the action of the committee, that he felt bound to refuse "to further share the responsibilities of their neglect." Another member is of opinion that "a certain interest is too strongly represented on the committee," and another that the decision in regard to a prosecution should not have been brought before them, since "it was exceedingly hard to compel them to sit in judgment on one of their own committee." The gentleman just referred to further mentioned in a letter to the public announcing his resignation that in regard to the more recent proceedings of the council "it was with great difficulty that personal violence was prevented." The whole affair is, we must confess, most deplorable, and if visitors to Brighton are to be dependent on the administration of a sanitary committee such as this we can well understand their having certain misgivings as to their food-supply and the sanitary

condition of the houses in which they temporarily reside. If the opinion of the sanitary committee is to override that of the medical officer of health on a matter such as the detection of tubercle, or proper proceedings are not to follow the exposure of diseased meat for sale, then the sooner this sanitary committee is replaced by another of higher aims the better for the health of the inhabitants of Brighton. We take it, however, that the remedy is in the hands of the ratepayers themselves. Meanwhile we trust the rest of the committee, and, indeed, the town council as a whole, will not resign, but will, by their presence, aid in effecting a reformation.

THE ANTHROPOMETRIC MEASUREMENT OF CRIMINALS.

WE are glad to learn that Dr. John G. Garson, who for a long period assisted Sir William Flower as Conservator of the Anatomical Museum of the Royal College of Surgeons of England, has been appointed by the Home Secretary the first superintendent of the Bertillon method for the measurement of criminals, the introduction of which into this country was decided upon as the result of a report made to the Home Office by a very competent Committee early this year. The duties attached to the post of scientific adviser to and superintendent of the new Anthropometric Office will include the instruction of the prison warders in the details of practical anthropometry. Although at first sight it would seem to be an easy task to take accurate measurements of certain skull diameters and bone lengths with properly contrived mechanical assistance, as a matter of fact—and this was proved by the evidence taken before the Committee the possible sources of error are numerous; and we pointed out when the report of those proceedings was published, and with special reference to Professor Arthur Thomson's interesting remarks, that for the effective use of "Bertillonage" much practice and skill in anthropometry would be demanded from the warders. They could not be in better hands to this end than in those of Dr. Garson.

INFANT MORTALITY IN LONDON—1893.

ONE of the most unsatisfactory features of English mortality statistics, taken as evidence of sanitary condition, is the comparatively slow rate of decrease of infant mortality. The death-rate at all ages in England and Wales in the ten years 1881–90 was 15 per cent. below the rate in the ten years 1861–70—that is, before the passing of the Public Health Acts of 1872 and 1875. The decrease in the death-rate of infants under one year of age in the same period did not, however, exceed 8 per cent., although it is in the first year of life that the excess of mortality due to distinctly preventable causes is largest. If we look at the London figures we find that while the mean rate of mortality at all ages declined 16 per cent. in the twenty years above referred to, the decline in the rate of mortality among infants did not exceed 6 per cent. It is also disappointing to find that in the first three years of the current decennium, 1891-93, the mean rate of infant mortality considerably exceeded the mean rate in the ten years 1881-90, both in England and Wales and in London. This result was in great measure due to the fact that in recent summers, but especially in 1893, the mean temperature was considerably above the average. The proportion of deaths under one year of age in London to registered births was last year equal to 164 per 1000, and exceeded the rate in any year since 1874, when it was the same. The rate of infant mortality last year ranged in the five groups of registration districts from 158 per 1000 in the north, to 175 in the east, and 181 in the central group of districts. In the 41 metropolitan sanitary areas, however, the range of rates of infant mortality was far wider; the rate did not exceed 102 per 1000 in Hampstead and 128 in Lewisham, while it ranged upwards to 202 in Clerkenwell, 205 in Limehouse, 206 in St. George Southwark, 209 in St. George-in-the-East, 214 in Holborn, and 219 in Strand sanitary area. Although infant mortality may be more directly governed by maternal care and attention than by what is generally understood as sanitary condition, it is well to bear in mind that as a general rule infant mortality—that is, the rate of mortality under one year of age—bears a constant relation to the death-rate at all ages, which few now venture to disregard as evidence of sanitary condition. There are, however, some strange anomalies in the Metropolitan rates of infant mortality which call for investigation. It is not by any means clear why in West London, where the death-rate from all causes is so distinctly below that in the rest of London, the rate of infant mortality should materially exceed that which prevails in the north and south groups of districts; or why the death-rate of infants in Fulham should considerably exceed the mean rate in the whole of London. We commend the subject of infant mortality in London and its wide variations to the notice of the medical officer of the London County Council.

THE USE OF THE WORD "VETERINARY."

THE *Times* reports that at the North London Police-court, Frederick Browning, a farrier, of Howard-street, South Hornsey, was charged with acting as a veterinary surgeon without the necessary qualification, under Section 17 of the Veterinary Surgeons Act, which sets forth that no person who was not a member of the college, or who was not registered as a practitioner, or holder of the veterinary certificate of the Highland Agricultural Society of Scotland at the time of passing the Act, should be allowed to practise as a veterinary surgeon. The defendant did not call himself a veterinary surgeon, but he put on his sign "Veterinary Forge." Relying on the judgment of Justices Hawkins and Williams, Mr. G. Fletcher argued that this was a pretence of special veterinary knowledge. Mr. C. V. Young, in the face of that judgment, made no attempt to defend. The defendant was let off with a fine of 20*s.* (though liable to one of £20), and 23*s.* costs. It is said that there are twenty other farriers who employ some such title as "Veterinary Forge." There are materials here for consideration by the executive committee of the General Medical Council in reporting on the proposed amendment of the Medical Act. The fortieth clause must be so amended as to cover any words that mislead the public, though falling short of an actual false title. It cannot be permitted that Acts framed with the object of protecting the public from deception should be more explicit in the case of horses than in that of man.

THE METROPOLITAN ASYLUMS BOARD AND CONTAGION.

IT is an axiom in sanitation that no means should be left unemployed which are even likely to prevent the spread of infectious disease. The principle involved, as we showed in a recent article,[1] enjoyed an established reputation long before the birth of the present generation. It is when we come to practice that difficulties appear, and with them arises a strong inclination to compromise matters with convenience. Those of us who, coming much into contact with the routine usages of household life, are the more open to this form of temptation may learn something from the wholesome, if rather excessive, orthodoxy exhibited in a recent resolution passed by the Metropolitan Asylums Board. This decision is intended to exclude any workmen other than permanent hospital servants from such occasional

[1] THE LANCET, July 7th, 1894.

service as chimney-sweeping, window-cleaning, and the like in hospitals under the control of the Board. The reason given for this rather drastic measure is that an outside assistant, if thus employed, periodically becomes liable to act as a carrier of contagion. The proposal is, indeed, a comprehensive one, in its scope as well as its mechanical associations. As may be supposed, it did not pass unchallenged. It savours very strongly of zeal for hygiene, but this, we must remember, is, after all, a highly useful quality, the very excess of which, if that were possible, means a certain gain to public security. We admit that it is hardly possible to think of a chimney-sweep as a bearer of contagion, so liberally is he dusted over daily and hourly with a disinfectant of approved value. The window-cleaner and one and all of the occasional day labourers associated with him occupy a different position in this respect. If the sweep is not to be considered as clean in a sanitary sense, there can be no hope for them. Some hardship in a consequent limitation of work is inevitable. At the same time it is clear that an arrangement such as that contemplated by the Board, if it can be made to work, is quite permissible in the institutions under its charge. It must be useful, at all events, in preventing any risk incurred by loitering in wards, a possible occurrence under any circumstances. If excess of caution in such matters be an error it is at all events one on the side of safety, and as such will not evoke the opposition of public opinion.

CHRONIC ANTERIOR POLIOMYELITIS.

EARLY in the year in the *Progrès Médical* J. B. Charcot and A. Dutil recorded a case of this character, which was recently abstracted in the *Neurologisches Centralblatt*. The patient was a man of fifty-six, whose illness began in 1890 with weakness in the upper extremities. This was soon accompanied by atrophy affecting the muscles about the shoulder, and also those of the arms and hands, the wasting being most evident in the muscles of the ball of the thumb, in the interossei, the deltoid, and triceps. The legs were also affected, the wasting showing itself both in the thigh and leg, and there were numerous fibrillary twitchings, but no sensory impairment. The patient died asphyxiated—the respiratory muscles having become involved—about two years after the commencement of his illness. At the necropsy were found (1) chronic anterior poliomyelitis, especially affecting the cervical region, with endarteritis and sclerotic atrophy of the ganglion cells; (2) very slight alteration in the anterior roots, but well marked degeneration of the various peripheral nerves, and (3) in most muscles simple atrophy, while in those in which total or partial reaction of degeneration was present there was wasting of the fibres.

EXPERIMENTS ON ANIMALS.

THE return ordered by the House of Commons showing the number of experiments performed on living animals during the year 1893 under licences granted under the Act 39 and 40 Vict., c. 77, contains much information as to the conditions under which certificates are granted and the use to which these certificates have been put during that period. Of the 184 licences in force only 135 were used. These licences were distributed over 56 licensed places in 37 different institutions in England and Scotland. Two new licensed places were added during the year, and seven were removed from the register. All the licences were "granted and allowed only upon the recommendation of persons of high scientific standing," and to "persons who, by their training and education, are fitted to undertake experimental work and to profit by it." Great care has also been taken that the experimental work should only be conducted in suitable places. Of the 4046 experiments undertaken during the year, 1001 were performed under the licence alone, and 140 under certificate C, so that not one of the animals suffered pain, complete anæsthesia being "mainatined from before the commencement of the experiment until the animal is killed." Of the 2183 experiments made under certificate A and the 67 under certificates A and B, the pain of the operation was nothing more than a prick with the point of a needle. Of the animals allowed to come from under the influence of the anæsthesia after the operation there were 591, and, as pointed out, "these operations in order to ensure success are necessarily done with as much care as are similar operations upon the human subject, and, the wound being dressed antiseptically, no harm results during the healing process." Of the total experiments, 885 were physiological, 2065 were pathological, and 1096 were therapeutical or pharmacological. It will also be seen on reference to the report that most careful inspection was carried out by the inspectors appointed under the Act. In Ireland there were four licences during the year, one of which expired and another of which was granted in June. Only two of the licences were used. Twelve experiments were made, all of which were painless and were directed to useful ends; two of the experiments were physiological, nine were pathological, and one therapeutical.

THE NERVE REGULATING LACRYMAL SECRETION.

IN the *Revue Neurologique* a paper by Jendrassik has lately appeared, in which he asserts, on the evidence afforded by careful clinical observations, that the so-called lacrymal nerve is not the nerve that subserves the secretion of tears, but that this is the function of a part of the facial nerve. Goldzieher arrived at the same conclusion some time ago. The following, according to Jendrassik, is the way in which the fibres of the facial nerve which serve this purpose reach their destination. They leave the main trunk of the nerve at the level of the geniculate ganglion and run in the superficial petrosal nerve to the spheno-palatine ganglion. From here a part of the fibres goes to the palate, another part, after crossing in the second branch of the fifth nerve, to the orbital nerve which goes off from the trigeminal at the level at which the facial fibres enter. Immediately in front of the lacrymal gland the orbital and the lacrymal nerves unite and from this united trunk the secretory nerves are transmitted into the gland. No doubt the acceptance of such a statement as this would explain some peculiarities in connexion with facial paralysis, but it would seem to imply that the facial nerve also supplies the palate. Against this, as is well known, the evidence now is practically overwhelming.

THE RÔLE OF BACTERIA IN BUTTER-MAKING.

PROFESSOR H. W. CONN and Mr. Wm. M. Esten, following up the investigations of Storch, Weigmann, Adametz, and Wilckens, have carried on a series of experiments on the ripening of cream for butter-making by artificial cultures of bacteria, the results of which are given in the Sixth Annual Report of the Storrs Agricultural Experiment Station, issued this year. The importance of the subject is so great that a prize of considerable value was at one time offered to anyone who could place in the hands of dairymen a culture of a bacterium or of a mixture of bacteria which, added to cream, would set up the peculiar fermentation through which the cream must go before it is churned into good butter. Up to the present no one has been completely successful in obtaining satisfactory results; but from this report it is evident that these American workers have succeeded in separating out organisms which so far ripen cream in the proper manner that, although not one of the species examined would when used alone for ripening cream produce a typical flavoured

butter, "many of them produce butter which is excellent in flavour and which was preferred to that of the normal ripening." Out of a large number of organisms separated no fewer than fourteen were used, whilst, in addition, the bacillus acidi lactici, the micrococcus freudenreichei, the bacillus katz, and the bacillus schafferi produce a butter ripening fermentation, but not so good as that obtained from the use of some of the organisms obtained from the creameries. Professor Conn maintains that if the organisms be obtained from sour cream in a dairy that has a reputation for making good butter they in turn will give good results, the converse holding good that organisms from a bad dairy will produce bad butter. The experiments with mixtures of the different organisms are not yet completed, but it is probable that by combining the action of several micro-organisms an even finer flavour may be obtained in butter made from cream ripened by these artificial cultures. Preliminary heating of the cream to 70° C. prepares the way for the growth of the inoculated bacteria, killing off most of those bacteria that are accidentally present and which often disturb the ripening process. The preliminary heating to 70° C., is of further importance from the fact that so many of the disease germs succumb when exposed to this temperature. One great advantage of this method is that the process may be made to extend over a somewhat longer period than is usually found necessary in dairy operations. In fact it can be controlled much more accurately than the natural ripening process. The bacteria may be kept alive and active for some time, so that, a good stock having been obtained, a certain flavoured butter can always be at command.

JAPANESE BATH-HOUSES: A LESSON IN CLEANLINESS.

JAPAN has learned much in matters of practical utility from the Western World, and it has in its turn opened up a commerce of the richest kind in things æsthetic. Science also, in which, if in anything, we may claim to have shown a certain mastery, has reaped no small advantage from the originality of our Eastern neighbours. Even sanitation has gained somewhat. Scrupulous cleanliness, it is well known, is a Japanese virtue, and one which has arrived at a degree of excellence in practice unknown among ourselves. How many of our artisans are in the habit of daily changing their working clothes; how many bathe daily the whole body? The answer may best be left in discreet obscurity. Yet these are among the common and habitual privileges of every workman in the dominions of the Mikado. Many, indeed, bathe twice a day. In order to allow of this salutary practice almost every street possesses its public bath-house. The method pursued in these establishments has been well explained in a recent number of the *Sanitary Record*. The bath, a warm one, measures about 5 ft. by 8 ft., and is 3 ft. deep. It is fed by a constant current of hot and one of cold water, and is continually replenished by fresh additions. The bather plunges into it, remains immersed ten minutes or so, rubs himself with a towel, then has a general douche of warm water, which is fresh in each case, repeats the process, is finally dried, and goes home. The cost of thus cleansing the body is very small. That it is not altogether free from objection most of us who are accustomed to use an entirely fresh supply of water on each occasion will admit. Still, the Japanese, with his douche basin, may well arrive at an excellent result in spite of his immersion in water, which, though clear, is not, of course, microscopically pure. The same idea, with an improvement in this respect, should be applied to the case of our own comparatively unwashed working classes. One or two ablutions a week would be rank uncleanliness compared with the daily plunge and douche of labouring Japan. The provision of cheap public bath-houses, with a sufficient supply of clean water, is a dream of the sanitarian as yet unrealised in London, although the civic authorities in many of our large towns, notably Glasgow, have already devoted much attention to this subject.

THE METROPOLITAN HOSPITAL SUNDAY FUND.

A MEETING of the council of the Metropolitan Hospital Sunday Fund will take place at the Mansion House on Monday, July 30th, at 3 P.M., to receive the report of the Committee of Distribution, to order payment of awards to hospitals and dispensaries, and to transact general business. Referring to our leading article on the result of the last Hospital Sunday collection, we are informed that the figures therein printed did not quite accurately represent the completed totals received from the congregations mentioned. Thus from St. Michael's, Chester-square, the Rev. Canon Fleming sent £1202 15*s.*, and the Rev. J. C. Ridgeway £1059 from Christ Church, Lancaster-gate. The amount collected by and received from the Chief Rabbi now reaches the sum of £845. We have not yet received the figures of Cardinal Vaughan's offertory.

THE INDIAN MEDICAL CONGRESS.

WITH the object of bringing together medical men from all parts of the Indian Empire to discuss subjects connected with Indian diseases and to place on permanent record some of the work which is now lost to science for want of proper publication a Congress, as we have already announced, will be held in Calcutta from Dec. 24th to Dec. 29th of the present year. The preliminary programme of the Congress proposes to divide the work into six sections—namely, (1) medicine and pathology; (2) surgery, including ophthalmology; (3) obstetrics and diseases of women and children; (4) public health; (5) medico-legal medicine and insanity; (6) pharmacology, specially indigenous drugs—and the coöperation of medical men from other countries is earnestly invited by the executive, who have organised a special committee to provide for the comfort of visitors. Arrangements have also been made for visiting the chief centres of interest in India. Dr. W. J. Simpson and Dr. D. M. Moir have been appointed central secretaries.

CHOLERA AND THE NOTIFICATION OF DIARRHŒA.

THE circular which has recently been issued by the Local Government Board as to the desirability of the notification of diarrhœa during the current quarter is one which the several sanitary authorities throughout the country will do well to consider. The serious recrudescence of cholera on the Continent should stimulate those entrusted with the carrying out of the Public Health Acts to take every possible precaution for the detection of any suspicious cases of the disease which may arise in, or be brought into, their districts; and the suggestions contained in the circular in question will, if acted upon, considerably facilitate early detection of sporadic cases of cholera. As we have already briefly pointed out, the Board's circular reminds sanitary authorities that last year the localised outbreaks of cholera which unfortunately occurred in this country were in many instances preceded by diarrhœa, generally quite excessive in amount and often choleraic in type; and that the existence of this diarrhœa was only discovered when the disease had been added to those notifiable under the Act. The Board then refers to the necessity of diarrhœa being made notifiable before the advent of cholera if it is to be of any use in detecting early and perhaps ill-defined forms of the disease, and sanitary authorities who decide to seek the Board's sanction for making diarrhœa notifiable are invited to consider the expediency of confining the notification

to attacks occurring in persons over one year of age. This latter point is one which we imagine will be particularly acceptable to those local authorities who raised objections to the expense of diarrhœa notification last year. There is little doubt that the omission of infantile diarrhœa from the cases notifiable will make a very considerable reduction in the expenses of administration; but, at the same time, sanitary authorities who adopt this course must understand that in the event of cholera becoming prevalent in their district it would be necessary to at once include infantile diarrhœa. The London port sanitary authority has always been well to the fore in matters of port administration, and we hear now that the chairman of the Port Sanitary Committee (Mr. H. H. Thompson) has given notice that at the next meeting he will move that, in consequence of the recrudescence of cholera on the Continent, diarrhœa should be added to the notifiable diseases until Sept. 30th. We are glad to see that London is setting so good an example in this respect.

THE MEDICAL BATTERY COMPANY, LIMITED.

ON Wednesday last the Medical Battery Company, Limited, with which in more than one relation we deal this week in a leading article, received sanction from Mr. Justice Vaughan Williams to a scheme of reconstitution. The learned judge said that he must be satisfied that the business to be carried on was proper, and only sanctioned the scheme on the understanding that the electrical treatment and the sale of electrical belts should be controlled by a duly qualified medical man. This sanction runs a risk of being of no practical worth. The General Medical Council, knowing more things medically, will require more intimate satisfaction than his lordship as to the propriety of the Medical Battery Company, Limited, as a business, and the probable result will be that any duly qualified medical controller would cease to be duly qualified as a result of his appointment. Which is a *reductio ad absurdum*.

DEATHS UNDER CHLOROFORM.

Two deaths recently recorded under chloroform possess more than passing interest. A delicate infant aged only three months was taken to the North-Eastern Hospital for Children and there placed under chloroform while two operations were performed upon it. These occupied twenty-five minutes, and two minutes later the child died. The house surgeon said it would have been wiser to have done one operation at the time and deferred the other. The death seems largely to have been due to the shock of the operations upon a young and feeble child. Unhappily the reports in the daily papers do not give sufficient detail to enable us to form an exact opinion in the case; but if the infant was *in extremis* at the time of admission it was doubtful wisdom to give chloroform at all. In the second case a man of forty-six was admitted into the Royal Infirmary, Bristol, to be operated upon for the relief of rectal abscess. The man was, it would appear, extremely nervous, and while taking chloroform struggled most violently. The heart, it is said, stopped; but we are not told whether, in the course of his struggles, the respiration was interfered with. It was pointed out by Snow that these cases of apparently healthy persons, in whom no heart lesion of any kind can be detected, are rendered most dangerous for chloroform inhalation unless the administrator is experienced and alive to the danger. Such persons struggle and take deep gasping respirations, whereby large quantities of chloroform vapour enter the lungs and in due course poison the medullary centres. The venosity of the blood of the person who struggles will, of course, bring about this state of things more easily.

THE opponents of the British Institute of Preventive Medicine must, we may assume, now number 5000 persons, seeing that a petition signed by this number of persons protesting against the proposal has been presented to the London County Council. The petition was referred to the General Purposes Committee. We do not, however, anticipate that the Council will take any action in the matter; they would not be likely to do so unless the public health were menaced, and such a suggestion has, of course, no grounds. The only interest which attaches to the incident is the proof which it affords of the readiness with which people can be misled; it may be hoped that the action of the petitioners will lead to the Council's committee issuing a reassuring report which will show how little cause there is for this alarm.

DR. BORNAND, the eminent Swiss consultant lately deceased at Berne, bequeathed his fortune (which was considerable) to the Académie de Lausanne for the endowment of a chair of Embryogeny in that school. His *armamentarium chirurgicum* and his microscopical instruments he also presented to the Académie, while his magnificent library becomes the property of the *bibliothèque cantonale* of his native Canton de Vaud.

DR. WYNN WESTCOTT, Coroner for the North-Eastern Division of the County of London, has, with the approval of Sir John Hutton, chairman of the London County Council, appointed Mr. G. E. Yarrow, M.D. Heidelb., L.R.C.P. Lond., M.R.C.S. Eng., L.S.A., D.P.H., Barrister-at-Law, to be his deputy.

THE next annual meeting of the British Dental Association will be held in August, 1895, under the presidency of Mr. Bowman Macleod, the Dean of the Edinburgh Dental Hospital and school.

SIR JOHN WILLIAMS, M.D., F.R.C.P., has been elected Honorary Fellow of the Obstetrical and Gynæcological Society of Berlin.

Pharmacology and Therapeutics.

THIOFORM.

THIOFORM is a bismuth salt of dithion, a derivative of dithiosalicylic acid, and is a very light, yellowish-brown powder which is not poisonous, has no smell, and is insoluble in water. It is used similarly to iodoform and is remarkable for its drying powder; it is, however, but slightly antiseptic. Dr. E. Fromm has found it very serviceable in ophthalmic practice.[1] In conjunctivitis and purulent ophthalmia he dusts it in a very finely powdered state over the conjunctiva, and in strumous ophthalmia in children he prefers it to calomel, as it goes better with internal iodine treatment. In corneal ulcers, even when hypopion is present, it is also useful. In ophthalmic operations, such as extirpation of the eyeball, it has shown itself valuable on account of its powerful styptic properties.

LACTOPHENIN.

Lactophenin is allied to phenacetin both chemically and therapeutically. It is a crystalline powder with a somewhat bitter taste and is very slightly soluble in water. According to Landowski it acts precisely like phenacetin when both are given in 9 grain doses, but 15 grains of lactophenin produce a decidedly hypnotic effect. Jacksch, who employed it in doses of from 8 to 15 grains in typhoid fever, found that it always rapidly reduced the temperature, and also that it exercised a calming effect when there was restlessness or delirium. Dr. Jaquet[2] employed it in pneumonia, erysipelas, and influenza, and found that it nearly always reduced the temperature rapidly and for some considerable time

[1] Deutsche Medicinal-Zeitung, 1894, No. 40.
[2] Correspondenzblatt für Schweizer Aerzte, 1 Mai, 1894.

without any serious symptoms being produced; especially there was never any weakness of the heart's action or of respiration, or any dyspnœa, or collapse observed, and the pulse, as a rule, became fuller and slower, while the breathing remained unaffected. The great advantage of this drug appeared to be its calming hypnotic effect, together with its reduction of the fever. In one case, where a man given to drink was suffering from erysipelas of the head and was so violent that two people could not restrain him, a 45-grain dose of lactophenin resulted in several hours' sleep. The hypnotic value of lactophenin Dr. Jaquet estimates as intermediate between that of sulphonal and that of urethan. The usual doses employed by him were from 7½ grains to 10½ grains.

THE HYPNOTIC ACTION OF TRIONAL.

The action of trional forms the subject of a graduation dissertation by Dr. Otto Bakofen of Freiburg (Baden). This substance, which is allied to sulphonal, differs from it chemically in possessing an additional ethyl group, being di-ethyl-sulpho-methyl-ethyl-methane, while sulphonal is di-ethyl-sulpho-dimethyl-methane. The first observations on the hypnotic action of trional were published by Barth and Rumpel [3] who gave an account of seventy-two observations made on forty patients in the new Eppendorf Hospital, Hamburg, success being obtained in sixty-four instances. It was remarked that trional acted in many cases better than sulphonal, and that no troublesome symptoms were produced by medicinal doses. Since that time numbers of papers [4] have been published on the effects of trional—e.g., by E. Schultze of the Bonn Asylum; M. Horváth of Budapest; Schäfer, Ramoni; Boettiger of Halle; Raimondi and Mariottini of the Sienna Policlinic; Brie of the Bonn Asylum; Beyer of the Strasburg Psychiatric Clinic; Hammerschlag of Professor Jolly's Psychiatric Clinic in Berlin; Garnier of the Dijon Asylum; Giulo, and Allesandro. Amongst these and other writers there seems to be a remarkable unanimity. Trional appears to act particularly well in the very cases of insomnia where most other drugs refuse to produce any effect. In primary insomnia and in the sleeplessness of lunatic and alcoholic patients it seldom fails. It is spoken of most highly by Collatz in cases of sleeplessness in patients suffering from serious cardiac disease. According to some experiments on dogs, carried on in the Freiburg Pathological Institute, it was found that, whereas sulphonal did not produce sleep for two hours and a half, trional was effective in twenty minutes. When very large doses were given for several days—e.g., 6 grains per diem to a dog weighing about 3 lbs.—death ensued, which appeared to be due to paralysis of the central nervous system. A careful examination of the kidneys was made, and beyond a certain amount of hyperæmia nothing abnormal was found, and especially nothing to indicate any tendency to obstruction in the glomeruli. Occasionally, under special circumstances, as in a case of a dying lunatic mentioned by Schultze, hæmatoporphyrin has been found in the urine. In the dogs which were poisoned with trional, the brain, heart, liver, and gastro-intestinal system were all found normal. The ordinary dose of trional may be put down at from 8 to 30 grains. A case is related by Collatz, where a young man who suffered from epileptic fits attempted to commit suicide by swallowing 120 grains of the drug. In about a quarter of an hour he had an epileptic fit, which lasted about five minutes. He then complained of nausea, but did not vomit. He then went to sleep and slept twelve hours, his pulse and respiration being normal. The next day he slept a great deal, and in the evening complained of abdominal pain and retention of urine, for which a catheter had to be passed and 400 c.c. drawn off. This was of a dark amber colour, and free from albumen, sugar, and hæmatin. On the succeeding day the man was quite well.

STROPHANTHUS IN ALCOHOLISM.

Strophanthus, like digitalis, appears to be sometimes of value in cases of alcoholism. Dr. Skworzow [5] publishes an account of an old man who was corpulent and had a weak heart and intermittent pulse. He was a confirmed drinker. After being put upon seven-drop doses of tincture of strophanthus three times a day he felt very sick and began to dislike alcoholic drinks, which dislike, fortunately, became permanent. Two other similar cases were likewise successfully treated in the same way. In all these the immediate effect of the strophanthus was to produce nausea and profuse diaphoresis, results which are unusual when this drug is given in ordinary cardiac cases. It may be remarked that though alcohol was suddenly discontinued in these three cases no evil result followed.

LAXATIVE ACTION OF PODOPHYLLOTOXIN.

Podophyllotoxin is a substance which was first obtained from podophyllin by Podwyssotski.[6] It has recently been experimented on by Dr. Spindler [7] of Dorpat (or Jurieff), who finds that in animals it induces in large doses inflammation of the intestinal mucous membrane, causing vomiting, diarrhœa, with bloody stools, paralysis of the hind limbs, parenchymatous nephritis, and death. In small doses it is an excellent laxative. He prescribes for persons with constipation one-seventh of a grain in an alcoholic solution, which usually results in a normal stool. Sometimes, indeed, a single dose will cause a habitually constipated patient to go to stool regularly every day for a week or more. One great advantage enjoyed by podophyllotoxin over most other laxatives is that it does not bind the bowels afterwards. Dr. Spindler tried the effect of hypodermic injections of this substance, but was obliged to desist owing to the intense pain produced at the point of insertion. The amount of podophyllotoxin existing in podophyllin resin is from 20 to 30 per cent.

[3] Deutsche Medicinische Wochenschrift, No. 32, 1890.
[4] See also THE LANCET, Jan. 21st, May 13th, and Sept. 23rd, 1893.
[5] Wiener Medicinische Presse, No. 17, p. 653. 1894.

THE DETECTION OF SUGAR IN URINE.

BY ALFRED H. ALLEN, F.I.C.,
VICE-PRESIDENT OF THE SOCIETY OF PUBLIC ANALYSTS, SHEFFIELD.

THE paper of Sir George Johnson, published in THE LANCET of July 7th, on Some Common Sources of Error in testing for Sugar in the Urine, calls timely attention to a matter of great practical importance. The excellent work which Sir George Johnson and his son, Mr. G. Stillingfleet Johnson, have done in this and similar directions renders any additional matter from their pens of exceptional interest and importance. As a yet unpublished paper on the "Examination of Urine for small Quantities of Sugar" was read by me at a recent meeting of the Society of Public Analysts, when, at my invitation, Mr. Stillingfleet Johnson was present, I may, perhaps, claim to make some observations on Sir George Johnson's interesting paper.

The question of the occurrence of traces of sugar in normal human urine has been the occasion of much controversy, and the last word still remains to be said. Brücke appears to have been the first to state that all normal urine contained sugar, and this view was supported by Dr. Bence Jones and by Kühne, but opposed by Friedländer, Wiederhold, Meissner, and Babo. The question was re-examined in 1871 by Seegen, who pointed out many fallacies in the methods of those who had found sugar, and concluded that it was either absent from normal human urine or present in such small proportion that the then existing methods were insufficient for its positive recognition in the presence of co-occurring substances which simulate many of its reactions. On the other hand, Dr. F. W. Pavy, in 1878, concluded that sugar was a normal constituent of urine, and that no sharp line of demarkation could be drawn between the excretion in health and in diabetes, except quantitatively. Molisch, again, from the examination of a large number of samples of urine from healthy persons by the alpha-naphthol and thymol tests, came to the conclusion that traces of sugar are met with frequently in human urine; but the value of his tests, and hence the accuracy of his conclusions, have been disputed by Leuken and also by Seegen.[1] E. Luther also (as the result of the application of the furfurol and alpha-naphthol tests to a large number of samples, concludes that glucose is present in all human urine, the amount found in the excretion of adults averaging 0·1 per cent., while the total carbohydrates amount to 0·2 per cent.[2] According to E. Roos [3] the normal urine of the dog, horse, and rabbit always contains more or less carbohydrates, as indicated by the furfuraldehyde reaction and confirmed by the benzoic chloride test. Human

[6] THE LANCET, Sept. 24th, 1881.
[7] Jurieff Dissertation, 1883, quoted in the Vrach, No. 2, 1894, and in Nouveaux Remèdes, No. 9, 1894.
[1] Journ. Soc. Chem. Industry, vi., 149, 150.
[2] Chem. Centralb., 1891, ii., 90, and Journ. Chem. Soc., lx., 1559.
[3] Zeitschr. Physiol. Chem., xv., 513.

urine is stated by Roos always to give an affirmative reaction with phenyl-hydrazine, and the same is true of dogs' urine, while the excretion of rabbits gives especially well-formed crystals. The urine of all these animals was found to be slightly lævorotatory. By the production of the crystalline phenyl-glucosazone—a method free from the objections and fallacies which underlie nearly all other tests—I have proved to my own satisfaction that minute quantities of sugar are present in some specimens of urine from persons apparently in perfect health.

Dr. Pavy, in his letter published in THE LANCET of July 14th, asks the very pertinent question, if the crystalline osazone yielded by many samples of normal urine when examined by the phenyl-hydrazine test be not indicative of sugar, to what body must its formation be ascribed? Of course, glycuronic acid and its compounds are known to give a crystalline compound with the phenyl-hydrazine test, but they do not appear to exist in normal urine. The fact appears to be that while normal human urine may contain traces of sugar, which certainly appears there temporarily on very slight provocation, sugar is by no means constantly present, and a great number of the observations recording its occurrence are quite inconclusive. But a hundred cases of non-occurrence do not disprove a single well-authenticated case in which sugar has been detected. To say that the very fact of sugar being present proves the urine to be abnormal is to beg the question. From the paper of Sir George Johnson, and correspondence and conversation with his son, I gather that they both hold a strong negative opinion as to the existence of traces of sugar in normal urine. This opinion appears to be largely based on the results obtained by examining urine from which all uric acid and kreatinine have been previously removed by suitable treatment with mercuric chloride. I have had a considerable experience of the mercuric chloride method, which was originally proposed by Mehu, but has been improved by Mr. Stillingfleet Johnson. His present plan of removing the kreatinine by boiling the liquid for a few minutes, instead of allowing it to stand for some days at the ordinary temperature, is, I believe, a direct outcome of my objection to the time required for its separation. There is no question that mercuric chloride, used as directed by Mr. G. S. Johnson in presence of sodium acetate, so that potentially mercuric acetate is the reagent employed, is one of the most perfect precipitants which can be used. The precipitate produced in the cold contains all the phosphates and urates of the urine, together with the xanthine-bases, colouring matters, and any albuminous matters which may be present; while on standing or boiling the kreatinine is precipitated. Urea is incompletely precipitated on boiling with the mercuric chloride reagent. I prefer to add solid mercuric chloride and sodium acetate to the urine instead of using solutions of these substances, but this is a detail. Mr. G. S. Johnson, however, both in his published papers and his letters to me, recommends the use of a saturated solution of mercuric chloride in the proportion of one to four of the urine. Sir George Johnson, on the contrary, prescribes the very large proportion of nineteen-twentieths. I have found the subsequent removal of the excess of mercury most difficult to effect with certainty by means of ammonia; which, according to Mr. G. S. Johnson, should be dilute and added drop by drop, avoiding an excess, but according to his father should be employed strong, and to the amount of a few drops. Unless the mercury be perfectly removed at this stage the subsequent estimation of the sugar by titration with Pavy's copper solution becomes impossible or inaccurate. Hence I have found it preferable to remove the excess of mercury by boiling for a few minutes with zinc dust and filtering. To the filtrate I add a considerable excess of ammonia, which keeps the zinc in permanent solution, and I have proved that neither the ammonia nor the zinc and sodium salts introduced materially affects the accuracy of the determination. I have obtained excellent agreements in experiments, otherwise similar, in some of which zinc dust and in others ammonia was used to precipitate the mercury; but the curious point is that, in every one of the somewhat limited number of samples of urine from presumably healthy persons which I have hitherto examined by the mercuric chloride process, a small quantity of sugar has been indicated by the result of the Pavy titration. In some cases the proportion was as low as 0·05 per cent. of the urine, but a wholly negative result was never obtained. Of course the Pavy titration, even when conducted on urine which has been put through the mercuric chloride treatment, does not afford any absolute proof of the presence of sugar; but the samples which gave these small indications of apparent sugar yielded crystals of glucosazone by the phenyl-hydrazine test, and this fact is not capable of being readily explained away. On the other hand, Mr. G. S. Johnson states that, after subjection to the mercuric chloride treatment, healthy human urine gives no indication of sugar by the Pavy reaction, or at any rate he affirms that no trace of sugar then exists in the liquid. In this case it would be possible to add an infinitely large volume of the treated urine to a limited volume of Pavy's solution without the blue colour being lessened or destroyed. It would be interesting to learn from Mr. Johnson whether he has actually found this to be the case.

As explained by Sir George Johnson in his paper, the presence of kreatinine in normal urine causes the production of a red coloration with an alkaline picric acid solution, and it follows that, however convenient picric acid may be for the rough determination of sugar in typical diabetic urine, it is useless as a test for the traces of sugar alleged to be sometimes present in the excretion of healthy persons, unless the kreatinine be previously removed. Sir George Johnson attempts to make a correction for the colour due to the kreatinine, instead of precipitating it by mercury. It is true that the normal proportion and variation of the kreatinine of urine have been far less studied than that of the uric acid, although the former is present in considerably greater amount. This is largely due to the fact that uric acid and urates make themselves evident very readily, while their physical characters give them great pathological significance. On the other hand, kreatinine affords no indication of its presence to the casual observer, and its physiological and pathological significance are very imperfectly understood.

According to Mr. G. S. Johnson, about two grammes of kreatinine are excreted daily under normal conditions, against 0·5 gramme of uric acid, while Voit states the daily output of kreatinine at from 0·5 to nearly 5·0 grammes. It has further been proved by other observers that, as might be expected, the excretion of kreatinine varies largely with the diet, being greater when this is of a highly nitrogenous character. Taking Mr. G. S. Johnson's figures of two grammes daily, and accepting his statement that the copper-reducing power of this amount is equal to that of 1·6 gramme, or about 25 grains of glucose, it follows that normal urine will exert a copper-reducing power corresponding to 0·5 grain per ounce, and the reduction from the same cause is likely under a highly nitrogenous diet to reach two or three times this proportion. This amount will seem very insignificant to those who are in the habit of dealing with typical diabetic urine containing fifty times as much, but it is by no means negligible when small quantities of true sugar are in question, or when it is sought to ascertain with certainty whether traces of sugar are sometimes present in normal human urine. Now that we possess a means by which kreatinine may be readily and completely removed from urine, it appears to me a pity to attempt to apply the picric acid test for sugar in its presence, as is proposed by Sir G. Johnson. In my opinion, it is far preferable to remove the kreatinine by the mercuric chloride treatment and then test for sugar in the filtrate, after removing the excess of mercury. If this be effected by boiling with zinc-dust, as already described, the filtered liquid is well fitted for the determination of sugar, either by the volumetric copper process of Pavy or the colorimetric method with picric acid advocated by Sir George Johnson. Instead of removing the mercury, potassium iodide may be added in quantity sufficient to redissolve the precipitate first formed. On then adding caustic alkali solution no precipitate is produced in the cold; but, on boiling, a grey precipitate of metallic mercury will be thrown down if glucose be present. Unfortunately this reaction cannot readily be made quantitative.

I may here mention a modification of Pavy's process, which commends itself for use by medical men in that it does not necessitate the use of special apparatus. To avoid this disadvantage, I have devised the following form of the test:—An accurately measured volume of 10 c.c. or 100 minims of Pavy's ammoniacal copper solution, prepared in the usual way, is placed in a wide test-tube, and ten or twelve drops of petroleum or paraffin burning oil added. This forms an upper layer which effectually excludes the air. The test-tube is inserted into the neck of a wide-mouthed flask containing hot water, which is then heated until the contents

of the test-tube have reached the point of ebullition. It is desirable to add a few fragments of broken clay tobacco-pipe to the contents of the tube to ensure a constant evolution of vapour. The urine to be tested is treated with an equal measure of ammonia and filtered from the precipitated phosphates. A known volume of the filtrate is then further diluted with a definite measure of water, according to the proportion of sugar supposed to be present, and then added drop by drop to the boiling hot Pavy's solution by means of a small burette or graduated pipette, until the disappearance of the blue colour indicates the termination of the reaction. If 10 c.c. of Pavy's solution were employed the volume of urine required to decolourise it contains 0·005 gramme of sugar; or if 100 grain measures of the copper solution were used the urine contained 0·050 grain of sugar. By operating in the foregoing manner, fair approximate determinations of sugar are obtainable very rapidly and with the simplest of apparatus. Experiments in my laboratory by Mr. G. Bernard Brook show that unclarified urine from healthy persons exerts on Pavy's solution a reducing action equal to that of a liquid containing from 0·1 to 0·3 per cent., or 0·4 to 1·3 grain per ounce of sugar. Of course, this reduction is not due entirely to actual sugar, the kreatinine and uric acid being accountable for the greater part of it.

Sheffield.

CHELSEA HOSPITAL FOR WOMEN.

WE published last week an abstract of the report of the special committee instructed by the responsible authorities of the Chelsea Hospital for Women to inquire for them into the accuracy of Dr. Louis Parkes's report[1] to his vestry (Chelsea) upon the sanitary condition and medical management of their hospital. In pointing out that Dr. Parkes's position was practically endorsed throughout by the recommendations of the committee of inquiry, we urged the necessity for decisive action on the part of the hospital authorities. We are glad to say that they also have recognised this necessity.

On Tuesday last the governors of the hospital met under the chairmanship of Earl Cadogan. His lordship said that the board of management of the hospital had resolved to act upon the advice of the committee of inquiry. Dr. Parkes, he added, had qualified and explained in a handsome manner his use of the word "justifiably" with regard to the undertaking by the staff of certain operations.

Letters were then read from the medical staff resigning their posts as physicians to the hospital. After some discussion upon the omission of a representative of the staff upon the committee of inquiry, Dr. Fenton read a statement on behalf of himself and his colleagues, a condensation of which, forwarded to us by him for publication, here follows:—

"MY LORD, LADIES, AND GENTLEMEN,—It is thought that such an occasion as this cannot be allowed to pass without an expression from the staff as to their position. I therefore beg to trespass on the time of this meeting to make a short statement. We do not for one moment impugn the impartiality of the Commission of Inquiry, but we must point out that the medical staff had not the representation upon it that was originally suggested and accepted by the governors at large; of one or more of our consulting staff. It would, we believe, have been of great assistance to the Commission if they had had one gentleman at least who had a knowledge of the internal economy of the hospital. However, we do accept the recommendations of the Commission, and in order to give the governing body a perfectly free hand to carry out those recommendations to the letter we have resigned in a body. We desire to point out that in a letter under date April 24th, 1894, addressed by Dr. Parkes to the Commission, the following paragraph (page 7 of the Report before you) 'The use of the expression "justifiability," as applied to these operations, was therefore only intended to appertain to the special and temporary circumstances of the hospital in the year 1893, and was not introduced in order to raise the question of the general propriety or fitness of any class of surgical operations in general.' The Commission then proceeds to make the following comments: 'It will be at once observed what an important limitation this explanation has placed upon the meaning attached to the report. Most undoubtedly, as we have said, the paragraph was understood to have a much wider application.'

"Now from such comments as have already appeared since the publication of this report we notice that it is not yet recognised that this statement as to the justifiability of these operations *per se* has been withdrawn by Dr. Parkes and accepted by the Commission (pages 7 and 8 of the Report). In this connexion we must emphasise the fact that not a single operation has been performed in 1893 within the four walls of this hospital that does not form a part of the common practice of the leading general metropolitan hospitals which have departments doing similar work. As regards our general mortality for 1893, we wish to state that it is lower than that of at least three of the most important general hospitals working on the same lines as ourselves; and this in spite of the fact, admitted by the Commission that we were labouring under the disadvantage of sanitary defects in the hospital. The existence of these sanitary defects did not become patent to us till the end of the year, inasmuch as the twenty cases of septicæmia after operation occurred in the practice of eight operators, and were scattered over a period of thirteen months. This insanitary condition of the hospital has necessarily affected the mortality of the operators under the thirteen heads into which they are divided in this report (page 8). I do not propose to take up your time by commenting upon all these classes, but with your indulgence I must refer to the first class—viz., ovariotomy. The small number of cases operated upon by each physician in one year cannot be accepted as a basis upon which statistics of mortality may be computed. For instance, during 1893 the death-rate after ovariotomy in the special departments in six of the leading metropolitan hospitals, which are supposed to be sanitarily perfect, varied from 4·3 to 22·2. Now ours did not attain this maximum in spite of our sanitary defects, now rectified. This variation of percentage of results surely shows the fallacy of reasoning on small figures. Similar variations can be shown to have existed in the returns from other hospitals with regard to the remaining groups—figures as to which I hold in my hand, but I will not weary you with them. Before resuming my seat I must call your attention to the so-called "exploratory incisions" that not a single one was performed merely with a view to diagnosis only. They were done with an honest belief that some morbid condition was present, which threatened life, and in the majority of them some fatal disease existed which was beyond the power of surgical skill to remove. Before performing any serious operations the risks were invariably explained to the patients and their full consent obtained. It must, moreover, be borne in mind that amongst the class that seek relief at this hospital many poor creatures are wholly disabled from earning their living, and have but the choice of undergoing operation or spending their remaining days in a workhouse. In conclusion we would ask, What possible motive could be attributed to any member of the staff of this hospital in performing operations other than a genuine and humane desire to relieve human misery and suffering?"

A governor suggested that the unanimity of the medical staff in tendering their resignations had been possibly due to a hint from the board of management, a suggestion which was repudiated by Earl Cadogan, who stated that the work of reorganisation would be promptly proceeded with.

[1] Vide THE LANCET, Feb. 10th, 1894.

THE

EFFECTS OF THE REPEAL OF THE COMPULSORY CLAUSES IN THE CONTAGIOUS DISEASE ORDINANCE IN THE STRAITS SETTLEMENTS.

BY R. W. EGERTON EASTWICK, B.A.,

LATE SHERIFF OF SINGAPORE AND MAGISTRATE AT PENANG.

Extracts from the reports of the Colonial Medical Officers and Protectors of Chinese (1885—1891).

1885. *Singapore.*—Dr. Rowell reports: "These facts (statistics given at the end of his report) show the steady improvement in the working of the Contagious Disease Ordinance. Our relative immunity (as compared with the state of things in India) may therefore be regarded as a source of much gratification. ..... Of the 26,976 examinations

17,367 were of Chinese women, of whom *3·1 per cent. were diseased.* ....."[1]

1886. *Singapore.*—Dr. Rowell reports: "..... Of the 27,609 examinations 17,469 were of Chinese women, of whom *3 per cent. were diseased.* ....."

Penang.—Dr. Hampshire reports: "..... 3 per cent. of the women examined were suffering from syphilis, and of these 2·83 per cent. were Chinese women. ....."

1887. *Singapore.*—Dr. Tripp closes his report with a regret that it had been decided to repeal the Contagious Disease Ordinance, and with anticipations that grievous results will follow the repeal.

Penang.—Dr. Hampshire reports: "The abolition of the ordinance as regards compulsory examination and seclusion in the Lock Hospital came into operation on Jan. 1st, 1888, when *all but 2 women out of 54 left the hospital* ..... 2·34 per cent. of the women examined were Chinese diseased with syphilis, and 4·72 were Indian suffering from the same malady ..... *380 Chinese women were examined in Province Wellesley, and not one of them was found to be diseased.....*"

Singapore.—Mr. Pickering, Protector of Chinese, reports: "On Dec. 31st, 1887, the collection or registration fee and compulsory examination ceased, but in other respects, and so far as the provisions for the protection of inmates of brothels are concerned, the ordinance is still being carried out. As I have already made a special report on this subject, I need only state that to the hundreds of unfortunate girls, who, in spite of all we can do, *are virtually the property of their mistresses,* I have every reason to believe *that the abolition of medical examination will be a real calamity.* This department will, however, spare no pains to induce the keepers of the brothels and their inmates to take advantage of the free medical treatment offered by the Government, and I trust we shall be successful....."

1888. *Singapore.*—Dr. Simon reports: "As I understand the new regulations in connexion with the Contagious Disease Ordinance, I take it that the object aimed at is not to induce healthy women to come up for examination, but to encourage women who may be sick or who may think they are sick to do so, and, if advisable, to seek treatment in hospital. Anyone who is acquainted with the character of Chinese women (at least of Chinese women as found in the Straits Settlements) cannot but be of opinion that any hope of success in this direction must be utterly futile. These women do not care in the least if they are sick themselves, do not understand the gravity of the danger incurred by others to whom they may communicate disease, and are, in my opinion, quite unfit to act as free agents in the matter ..... I may mention here that the number of cases of venereal disease admitted to the pauper hospitals in Singapore and Penang *in 1888 is greatly in excess of that in 1887.....*"

Singapore.—Dr. Mugliston reports: "At the beginning of 1888 there were under treatment in hospital 14 Europeans and Japanese and 127 native and Chinese women, making a total of 141, the majority of whom suffered from venereal disease of the worst type. On Jan. 4th it was made known to the patients that their longer stay in hospital would be entirely voluntary on their part, and that they could elect to stay or leave, *on which the whole number left and 141 centres of infection were thus scattered among the population.* ..... The number of *Chinese* that came up for examination is very small, considering that there are over 2000 prostitutes of that nationality in Singapore. There were 391 out-patients, but the greater number attended very irregularly and discontinued their visits before being cured, the result being far from satisfactory ..... of 74 women admitted during the year, 29 of whom were suffering from primary syphilis, *only 4 Chinese consented to remain in hospital.*"

[1] The portions italicised do not appear so in the copies of the reports.

Penang.—Dr. Kerr reports: "..... There is one noticeable feature, however—viz., the large increase in the number of registered women during 1888. The increase is chiefly amongst women of the strictly Chinese class."

1889. *Singapore.*—Dr. Mugliston reports: "..... Owing to the absence of that early check, which the compulsory examination clauses of the Contagious Diseases Ordinance put on the development of these diseases, cases are now met with of the worst type. ..... *no Chinese woman sought admission to the hospital.....*"

Penang.—Dr. Hampshire reports: "..... It may be that the proprietors of the brothels exercise an influence over the women which, under present circumstances, we have no power to counteract. Possibly, owing to their love of gain, these keepers have some remote idea that, if the sick women went to hospital, they would lose their services on their recovery; ..... under the present private arrangement (seeking examination by a doctor other than a Government officer) they only do so if free from disease,[2] or if it suits their convenience. The abolition of the Contagious Disease Ordinance (I trust in the interests of the population of the Straits Settlements it is only a suspension) is severely manifesting itself, as will be seen by the returns from the pauper hospital and also from the military hospital....."

1890. *Singapore.*—Dr. Leask reports: "..... It will be seen *that very few Chinese come up for examination,* though that disease of a virulent type exists to a large degree among women of this nationality is evidenced by the condition of *male Chinese* patients treated at Tan Tock Seng's Hospital and Out-door Dispensary. ..... Of the 668 women examined *only 10 were Chinese.....*"

Penang.—Dr. Hampshire reports: "..... 13 venereal cases were treated among Chinese and Klings (Indians)."

Singapore.—Mr. Powell, Protector of Chinese, reports: "..... Very few women except Japanese have taken advantage of the Government hospitals, to which all have ingress, and such as have were generally in an advanced stage of disease....."

1891. *Singapore* —Dr. Mugliston reports: "The experience of the past four years has more than verified the inference I made in my report for 1888 that with the lapse of time the abolition of the compulsory clauses of the Act would be attended with high rate of disease. Applications for out-door treatment were 62 Europeans, 106 Japanese, *3 Chinese,* 3 Malays, and 2 Indians, of which 60 were for venereal affections. There were 118 voluntary examinations—25 Europeans, 84 Japanese, *7 Chinese,* 1 Malay, and 1 Indian; of these 88, or 74·5 per cent., as against 28·2 per cent. in 1890, were found infected ....."

Penang.—Dr. Kerr reports: "..... 66 women were admitted for venereal disease, of whom 26 were cases of primary and 40 of secondary syphilis....."

CENSUS. TABLE A (1).

——	1856.	1866.	1871.	1881.	1891.
Singapore	248,000	273,000	97,131	139,208	184,554
Penang			133,064	190,597	235,618
Malacca			77,756	93,579	92,170
Total	248,000	273,000	307,951	423,384	512,342

[2] It is not unusual for a certificate of freedom from disease, granted by a private doctor, to be passed on to an infected inmate when the keeper is desirous of leasing or selling her. Compulsory seclusion rendered such an arrangement impossible.—R. W. E. E.

TABLE A (2).

——	Males.				Females.				Grand total.
	Singapore.	Penang.	Malacca.	Total.	Singapore.	Penang.	Malacca.	Total.	
Europeans and Americans...	4,312	893	85	5,290	942	308	49	1,299	6,589
Eurasians	1,764	824	821	3,409	1,825	888	935	3,648	7,057
Chinese	100,446	69,569	14,226	184,241	21,462	18,351	3,935	43,748	227,989
Malays and Natives	20,899	54,049	33,925	108,873	15,093	52,707	36,400	104,200	213,073
Tamils and Indians	12,953	26,629	1,204	40,786	3,082	9,616	443	13,141	53,927
Japanese	58	1	2	61	229	20	15	264	325
Others	888	919	74	1,881	591	854	56	1,501	3,382
Totals				344,541	... ...			167,801	512,342

TABLE A (3).

	In 1891.	
Increase in total population since 1881	89,958 or	21·0 per cent.
Increase in male population since 1881	62,864 or	22·3 ,, ,,
Increase in female population since 1881 ...	26,094 or	18·4 ,, ,,
Increase in number of persons, both sexes, treated (venereal cases excepted) since 1887 ...	8,542 or	54·5 ,, ,,
Increase in number of males admitted for venereal diseases since 1887	719 or	70·5 ,, ,,
Decrease in number of persons, both sexes, treated for poisoning since 1887	2	
Increase in number of deaths, both sexes (venereal cases excepted), since 1887	1,176 or	77·2 ,, ,,
Increase in number of deaths from venereal disease, both sexes, since 1887	23 or	107·6 ,, ,,

No increase or decrease in number of deaths from opium since 1887, only 1 occurred in each year.

TABLE B (1).

Numbers of Chinese in the Straits Settlements (according to tribe and sex) of the whole Colony in 1881.

—	Over 15 years.		Under 15 years.		Totals.	
	Males.	Females.	Males.	Females.	Males.	Females.
Cantonese ...	18,076	7,007	1,156	1,992	19,232	8,999
Hokkiens ...	40,183	3,095	1,837	1,361	42,020	4,456
Hylams ...	14,594	73	906	19	15,499	92
Khehs	13,342	1,101	524	424	14,366	1,525
Straits-born	6,066	7,783	5,752	5,667	11,818	13,450
Teo-Chews ...	39,124	1,582	825	601	39,949	2,183
Tribe not stated...	721	15	—	2	721	17
Totals... ...	132,606	20,656	10,999	10,066	143,605	30,722

TABLE B (2).

Of the whole Colony in 1891.

—	Over 15 years.		Under 15 years.		Totals.	
	Males.	Females.	Males.	Females.	Males.	Females.
Cantonese ...	27,933	10,836	1,361	1,878	29,294	12,714
Hokkiens ...	64,624	5,533	2,594	2,008	67,218	7,541
Hylams ...	14,800	147	932	59	15,732	206
Khehs	14,106	1,501	590	539	14,696	2,040
Straits-born	8,736	10,641	7,621	7,759	16,357	18,400
Teo-Chews ...	40,032	2,064	912	783	40,944	2,847
Totals ...	170,231	30,722	14,010	13,026	184,241	43,748

TABLE B (3).

—	—	1881.	1891.
Straits-born excluded ...	Males	131,787	167,884
	Females...	17,272	25,348

TABLE C.

Hospitals throughout the Colony (a).

—	1887.	1888.	1889.	1890.	1891.
Treated in hospital*	18,378	18,113	21,456	20,779	24,064
Died in hospital* ...	1,549	1,839	2,348	2,451	2,753
Venereal cases admitted†...	1,019	Not given	Not given	1,611	1,738
Deaths from venereal diseases* ...	26	36	42	62	54
Poison cases treated* c	99	124	108	77	97
Deaths from alcohol*...	1	Not given *b*	Not given *b*	0	1
Deaths from opium*	1	Not given	Not given	0	1

a Naval and military hospitals are not included.
b Four deaths occurred in 1888 and two deaths in 1889 caused by poisons, but the actual poison is not stated.
c These are cases of the abuse of alcohol principally, but all sorts of poison are considered.
* Males and females. † Males only.

TABLE D.

—	Registered on Jan. 1st, 1887.					Registered on Jan. 1st, 1891.				
	Singapore.	Penang.	Prov. Wellesley.	Malacca.	Totals.	Singapore.	Penang.	Prov. Wellesley.	Malacca.	Totals.
Number of Houses ...	222	90	5	13	330	242	95	7	15	359
European inmates	27	9	—	—	36	2*d*	—	—	—	2*d*
Japanese ,, ...	58	25	—	5	88	129	49	5	14	197
Malay ,, ...	16	1	—	—	17	23	11	—	3	37
Corrangee ,, ...	31	41	—	—	72	28	67	—	—	95
Chinese ,, ...	1688	1023	19	104	2834	1837	916	33	85	2871
Total					3047	Total...				3202

d Both women were Siamese. European prostitutes are not registered now.

TABLE E.

Military Hospitals.

—	1887.	1889.	—
Strength of garrison ...	1019	872	"After two years of change in the law."—Minute of the late Sir F. Dickson on the Military Contribution.
Cases in hospital... ...	41	96	
Venereal cases	15	68	
Other cases	26	28	

TABLE F (1).

LOCK HOSPITALS.[6]

Singapore.

	1887.	1888.	1889.	1890.	1891.
Examinations	28,461	1,932	316	668	118
Infected venereally and doubtful	1,186	231	129	189	88
Admitted and remaining from preceding year[1]	1,910	215[3]	122	122	89
Cases of primary syphilis	519	29	43	60	31
Cases of secondary syphilis	1	—	2	3	3
Cases of tertiary syphilis	—	—	4	1	8
Cases of gonorrhœa	1,297	Not given	9	6	4
Cases of bubo-syphilitic rheumatism, etc.	—	Not given	9	21	13
Cases of condyloma	—	Not given	3	2	3
Applications from out-door patients	—	391	304	207	176
Venereally infected out-door patients	—	267[2]	Not given	139	60

TABLE F (2).

Penang (including Province Wellesley).

—	1887.	1888.	1889.	1890.	1891.
Examinations	16,657	1,505	Not given	Not given	Not given
Infected venereally and doubtful	983	Not given	26	33	66
Admitted and remaining from preceding year[1] ...	1,092	163[4]	45	89	121
Cases of primary syphilis	348	43			26
Cases of secondary syphilis	—	2			40
Cases of tertiary syphilis	—	—			—
Cases of gonorrhœa	502	53	26	33	—
Cases of bubo-syphilitic rheumatism, &c.	Not given	Not given			—
Cases of condyloma	Not given	Not given			—
Applications from out-door patients	—	—	—	—	—
Venereally infected out-door patients	—	—	—	—	—

TABLE F (3).

Malacca.

—	1887.	1888.	1889.	1890.	1891.
Examinations ... ... [1]	Not given	Not given	Not given	Not given	Not given
Admitted and remaining from preceding year ... [2]	25	—	—	25	18
Cases of primary syphilis...	11	—	—	—	—
Cases of gonorrhœa	14	—	—	—	—

[1] These numbers include patients suffering from all kinds of illness.
[2] Of these 267 cases of infection 148 were of primary syphilis, 108 gonorrhœa, 11 ulcerated os uteri.
[3] 141 of these women were in hospital on Jan. 1st, 1888, but all left on Jan. 4th, 1888.
[4] 54 of these women were in hospital on Jan. 1st, 1888, when all but 2 left.
[5] Japanese women. Disease not specified.
[6] In 1884 there were 697 examinations, with 87 cases of infection, at Malacca, but since that year the number of examinations is not given. In 1885 there were 14,436 examinations at Penang, and of these 6·81 per cent. of the Chinese women were found to be infected, as against 6·46 per cent. of the women of all the other nationalities.

TABLE G.

Inmates of Registered Houses.

—	1885.	1886.	1887.	1888.	1889.	1890.	1891.
Monthly average number of inmates[1]	2832	2927	3180	3846	3673	3442	3137
Women arriving from China and registered as inmates	505	not given	not given	1218	710	667	676
Women leaving houses to marry men[2]	165	121	41	217	199	215	178

[1] European inmates not included after 1887.
[2] Most of them did so against the will of the keepers.

These extracts and tables point out with terrible significance not only the spread of venereal diseases, but also the increased virulence of their character among the population of the Straits Settlements since the repeal of the compulsory clauses of the Contagious Disease Ordinance came into operation on Jan. 1st, 1888. Whatever may be the consequences of the experiment in those parts of England and her possessions where the clauses were at one time enforced, it is very evident that in this colony the repeal has already led to most lamentable results. In the Straits Settlements not quite half the population is Chinese, and the registered women of that nationality either decline, or are not permitted, to avail themselves of European medical advice and treatment. These women numbered no less than 2871 on Jan. 1st, 1891, and we may easily comprehend to how great an extent the health of the malé portion of the Chinese community depends on their freedom from disease if we refer to Table B (2), where it appears that according to the last census there were 170,231 males and only 30,722 females above the age of fifteen. In country districts, such as Province Wellesley, a part of the settlement of Penang, there would seem to have been no disease whatever among the Chinese registered women before the repeal, for Dr. Hampshire reports in 1887 that 380 examinations took place and not a single woman was found to be infected; but now, the planters inform us, the women in the country suffer from disease as badly as those in the towns. On turning to Tables A (1), A (3), and C, we find the population of the colony had increased in 1891 at the rate of 21·0 per cent. since the preceding census, and the number of persons of both sexes treated at the hospitals (cases of venereal disease excepted) showed an increase at the rate of 54·5 per cent. since 1887; while that of males alone treated for venereal disease showed an increase of 70·5 per cent. since 1887, although the male population had increased since 1881 at the rate of only 22·3 per cent. Again, in 1891 the number of deaths from all diseases (venereal being excepted) showed an increase at the rate of 77·2 per cent. since 1887, whereas the number of deaths from venereal disease showed an increase at the rate of 107·6 per cent. since the same year, and this, of course, being exclusive of the number of women who died from the same cause, but had refused, or were not permitted, to enter the hospitals. We may gather from Table C that venereal disease, in the Straits Settlements at all events, is very much more deadly in its effects upon the constitution than the abuse of alcohol and opium, and for that reason, if not for any other, its rapid and extending growth possesses a much more urgent claim upon our attention and consideration. Some persons in this country, however, would have us believe that disease and death, arising from the excessive consumption of alcohol and opium, are widespread among the Indian and Chinese labouring masses. According to Table A (2) there were 227,989 Chinese and 53,927 Indians in the colony in 1891; most of these were coolies, and we might expect to find among them high rates of disease and death caused by such excess, if the reports of habitual and general excess were true. But the medical officers report that the number of persons treated for poisoning generally was ninety-seven in 1891, two less than in 1887, that the majority of the patients were suffering from abuse of alcohol, not from that of opium, and that one death was caused by the former and one by the latter, exactly the same numbers as those in 1887. It should be borne in mind that this report deals with a colony where wages are very much higher than in India or China, and where every facility is given to the coolie to indulge his appetite and propensities.

Too much stress cannot be laid upon those portions of the reports of Drs. Simon and Mugliston in 1888, of Dr. Hampshire in 1889, and of Dr. Leask and Mr. Powell in 1890, from which it may be inferred that Chinese women do not avail themselves of medical advice and treatment offered gratuitously by the colonial government, and that disease, very probably of a most virulent type, is prevalent amongst them. Table E marks the consequences of the repeal amongst the garrison in 1889, two years after it came into force, and, if they be prognostic, it would seem to be highly probable that a large percentage of the soldiers may require protection themselves as non-combatants, whenever the services of the troops may be needed for the defence of the colony. In Table A (2) we perceive that the largest disproportion between the numbers of men and women exists among the Chinese and Indians, while in the Eurasian and Japanese communities the females are the more numerous. Tables B (1) and B (2) give the distribution of the Chinese according to tribe and sex in 1881 and 1891. In 1891 the Teo-Chews above fifteen years of age numbered 42,096, and 2064 of these were females, while *only 147 women* were found among 14,947 Hylams above the same age. On the other hand, the females were more numerous than the males among the Straits-born Chinese. Now, although very many of the immigrants are married men, their wives are not permitted to accompany them to our colony, and for this among other reasons—viz., the Mandarins and their followers can always reckon upon obtaining a considerable part of the money remitted home by the absent husbands, and can look forward to a substantial *squeeze* whenever the latter return to their native village either to settle permanently or on a visit to see their families, which occurs about every three or four years. The majority of the coolies are, therefore, dependent upon such facilities for illicit intercourse as may exist either in the towns or in the country districts where they may be quartered. Most of the Hylams are domestic servants, and venereal disease is raging amongst them to such an extent that the European employers are warned from time to time by the colonial newspapers to lock away razors, scissors, brushes, and towels so as to avoid contamination and contagion.

We learn from Tables A (3), D, and G that the increase in the female population of the whole colony from 1881 to 1891 was at the rate of 18·4 per cent., and the increase in the number of registered women from 1887 to 1891 was at the rate of 6·3 per cent., and this without counting the inmates of European houses who have not been under registration since Jan. 1st, 1888. We may, therefore, presume that the repeal of the clauses has tended rather to attract such women to the colony than to frighten them away. There is, however, one point in Table G which may be noted as satisfactory—viz., the number of women who left the houses to marry or *follow* men in 1891 was more than four times the number of those who did so in 1887. These withdrawals appear to take place in opposition to the wishes of the keepers, from whose clutches the unfortunate women could seldom hope to escape, so long as they were worth detaining, were it not for the authority and interference of the Protectors of Chinese. So many as 215 women in 1890 and 178 in 1891 left the houses to live with Chinamen, who had managed to save money sufficient to set up a home in the colony. In most cases these women bear children

and it is amongst them that the traveller through the towns and country districts perceives the ravages of inherited constitutional disease, the appalling result of their parents' illness aggravated by neglect and want of proper medical treatment. But happy, indeed, may be deemed the lot of these women when compared to that of the wretched victim who remains behind. As for her, she is transferred from one place to another until her deplorable condition becomes too notorious, when she is sold to some speculative keeper, who carries her off with others like herself to the mines and plantations up-country on the Peninsula. There she continues unchecked to infect the ignorant coolies till death puts an end to her own indescribable tortures and closes the long list of men to whom she has communicated her terrible disease.

It may be seen from Tables F (1), F (2), F (3), on comparing the numbers of the examinations of registered women held in 1887 and 1891, that they sank from 28,461 to 118 at Singapore, from 16,657 to (probably) 66 at Penang, and from 25 to 1 (presumably) at Malacca, thus showing that, in place of 37,644 monthly examinations, which would have been held had the compulsory clauses remained in force, only 185 actually took place, although, perhaps, the number of applications for out-door relief should be added to these, making the insignificant total of 361. In the same tables we may notice that 878 of the women examined in the whole colony in 1887 were treated for syphilis, but only one of them was suffering from the disease in its secondary stage, and not one case of tertiary syphilis is reported, and this where, according to Table G, there were 3180 on the monthly register; but in 1891 of the few women who came to the hospitals 108 were found to be suffering from syphilis, and of these 43 cases were of the disease in its secondary and 8 in its tertiary stage. In this year there were 3137 women on the monthly register, and we can only conclude from the figures that among the hundreds of women, who did not present themselves for examination, the disease had become in 1891 proportionately, if not on a more excessive scale, more virulent than it was in 1887, the year before the repeal of the clauses. In corroboration of this there are the reports of Drs. Mugliston and Hampshire for 1889 and that of Dr. Leask for 1890, which direct attention to the advanced stages of the disease among the men in hospital. In Dr. Mugliston's report for 1889 it is stated that "*no Chinese woman sought admission to the hospital,*" and in that for 1891 it may be seen that only *3 Chinese* women applied for out-door relief, and *only 7* presented themselves for voluntary examination. These statements alone confirm, only too significantly, the opinion expressed by Dr. Simon in his report for 1883, that any hope of encouraging Chinese women, who may be sick or who may think they are sick, to seek treatment in hospital must be utterly futile. The Government and people of England should realise without delay the situation in the Straits Settlements, and no longer ignore the facts that among the Chinese immigrants there are more than six men to every woman, that disease of a most virulent type is rife amongst them, that the women decline, or are not permitted, to avail themselves of medical advice and treatment, and that the continuance of the present policy is inflicting an incalculable amount of harm and misery upon the innocent offspring of these people and upon the wives and families of the married men whenever the latter return to their homes in China. The advocates of the repeal must have learnt by this time, if they have taken the trouble to inquire, how the adoption of their policy by the Government has affected the population of such places as the Straits Settlements. It is not only for the sake of the miserable men and women, but also for the sake of their innocent children, that an appeal is now made to the British public to reconsider the whole subject, and to urge upon the Government the necessity of restoring the compulsory clauses to the Ordinance of the colony either permanently, or at least temporarily while an inquiry is held on the spot by commissioners appointed for that purpose.

There are thousands of people in England who interest themselves in promoting measures for the protection of aboriginal tribes, the suppression of the slave trade, the protection of women and children, the humane treatment of animals, the abolition of the traffic in alcoholic drink and opium. Is there no one who will advocate some measure for the relief of all this suffering humanity in our colony? Is there no one who will step forward to protect the innocent, to assist the helpless, and to devise means for subjugating this terrible scourge of disease, which in its effects is more deadly than drink or opium, more cruel than man, more crushing than slavery, and more demoralising than vice?

THE ANTWERP UNIVERSAL EXHIBITION.

(FROM A SPECIAL CORRESPONDENT.)

(Concluded from p. 156.)

THE GERMAN SECTION.

THE next in importance after the Belgian and French are the German exhibits. First among these stands prominently forward a large diagram shown by the German Government, and which explains the working of the Compulsory Insurance Law. Then there is a pamphlet in French gratuitously distributed which gives fuller explanations. Without attempting to deal with so vast a subject as that of compulsory insurance, the following are the principal figures, and they will give some idea of the gigantic nature of the organisation established by law in Germany.

Compulsory Insurance of the Workmen of the German Empire, 1893.

Total population 50,000,000
Wage earners 12,500,000

Insured against.	Illness.	Accidents.	Invalided.
Persons insured (earning not more than £100 per annum) ..	7,630,000	18,050,000	11,280,000
Persons receiving indemnities in money or in kind	2,768,000	258,460	239,650
Receipts in marks, comprising subscriptions and interest on capital invested..	135,000,000	74,400,000	114,800,000
Paid by the employers	32,000,000	58,400,000	48,100,000
Paid by the workmen	78,000,000	—	48,100,000
Expenses in marks, including money added to the reserve fund	127,000,000	58,400,000	114,800,000
For indemnities	103,000,000	38,200,000	28,000,000
For working expenses	6,000,000	8,000,000	4,800,000
Capital—Legal reserve fund to ensure working of the system	105,000,000	116,900,000	246,600,000
Average compensation or indemnity paid for each case ...	0·37	17·1	11·7
Average charges per person insured	0·14	3·2	9·5

This great scheme for the prevention of pauperism by compulsory insurance may also be considered as a scheme for the prevention of those conditions of ill-health that result from extreme poverty; therefore, from our special point of view it deserves to be studied. Doubtless it would be possible to improve on the method adopted in Germany. There is always a great deal to be learnt from experience, and the Antwerp Exhibition will serve to remind the social reformer that considerable experience has been acquired in Germany.

In the German section there are several other exhibits that relate to public health. For instance, C. Behn of Hamburg shows a model of an "automatic non-return valve." This is a hollow valve which lies in a slanting direction over the mouth of a soil-pipe. If water comes from the house the valve, being hollow, floats and lets the water pass out. If, on the other hand, there is a backwash from the sewer, the valve cannot rise, and it prevents the sewage travelling up into the house drains. Such a contrivance would be very useful in low-lying districts. A ball floater has been sometimes employed for the same purpose; but it takes up much more space and requires a specially constructed drain. The Badishe Thonröhren and Steinzengwaaren Fabrik in Baden exhibit large egg-shaped hardware drain-pipes more than two feet high, and Herm, Jos, Hupertz, and Co. of Euskirchen, Rheinland, have a great variety of drain-pipes both in respect to size and shape. Then there are the Automatischer Verschluss of Franz Ant Mehlem at Bonn on the Rhine, by which gallipots, glass bottles, &c., are hermetically and instantaneously shut. This result, most useful for the preservation of medicaments, provisions, &c., is secured by means of a lever that presses the lid down on a rubber flange. Coming also from Bonn there is the Ollendorff-Wilden apparatus for sterilising milk and feeding bottles. This is small, portable, and suited to family use. Near at hand Paul Hartman

of Heidenham has a large stand full of surgical bandages, cotton wool, catgut, draining tubes, vaccination pads, and an antiseptic surgical dressing-case. The great chemical manufacturers of Germany have very handsome stands—notably, the Verein Chemisher Fabriken of Mannheim, and L. C. Marquart's chemical works at Beuel, near Bonn. The mineral waters of Germany also hold a prominent place. Litto Joh Diedr, Bieber, has raised a lofty pyramid of Apollinaris water with its peak nearly touching the black German eagle that occupied the centre of a gold cloth canopy which gracefully shades off the raw glass roof of the section. Close by are the Kaiserbrunnen waters of Aix-la-Chapelle. The German beer and the Belgian beer take up much room in the exhibition. Some of the breweries have had the excellent idea of distributing with their circulars the result of analyses made of their beers by well-known chemists. Messrs. Kathreiner of Munich also distribute literature to prove the great benefits that would result if torrified malt was used in conjunction with or even as a complete substitute for coffee. The most striking perhaps of all the German exhibits is, however, that of Stollwerck of Cologne, who has raised Grecian temples in chocolate and has cascades of *bonbons fondants*.

RUSSIA, SPAIN, AUSTRIA, &c.

What shall I say of the other sections? From a medical and sanitary standpoint, it must be confessed that they offer but little interest. Even Russia, however, is able to show some earthenware drain pipes and syphon traps which, strange to say, are of an artistic olive green colour. Of course there is any amount of vodky and fancy liquors, but it is to be feared that these can scarcely be defined as hygienic. More to the purpose are the plans, models, and statistical diagrams of the Orloff Dimidoff Children's Hospital, named after St. Olga and established at Moscow. There are also large coloured photographs of every part of this well-known hospital, and these show that some of the most modern principles have been applied. Dresses, Russian embroidery, magnificent furs, art bronzes, and silver plate, for which the Russians are celebrated, close the list of the principal exhibits in this section.

In the Austrian section there is a Tyrolean wooden cottage, with panoramic views from the windows of the Tyrolean Alps. In the gardens there is a much larger and really magnificent panorama of the Burmese Alps. Both these panoramas are suggestive of the invigorating and agreeable advantage of selecting alpine regions for holiday tours. Messrs. G. Hill and Co. of Vienna are the only chemists I could find in this section, and they exhibit more especially capsules for taking noxious drugs. Of course Hunyadi Janos waters are exhibited. In the Italian, Spanish, and Portuguese sections wine and oils are the principal exhibits. The Compania Vicicola of Bilbao are seeking to put a light Spanish claret on the market to rival the light wines of France; and Messrs. Noël and Co. of Seville have a large stand made of Spanish liquorice root.

IN THE GARDENS.

Nearly all the above-mentioned exhibits are, so to speak, indoors—that is, in the main building of the exhibition—but it is probable that a large number of visitors will prefer spending most of their time outside, in the gardens. Here there are a great number of attractions, such as a public market-square of Tunis, a street from Cairo, and a most artistic, accurate, and elaborate reproduction of ancient Antwerp, with the waiters, attendants in the shops, guards, &c., all dressed in the costumes of the sixteenth century. In these gardens some interesting ethnological studies can be made. For instance, Mr. E. S. Archer has brought over eleven Zulu warriors. Seven of these men took part in the war against the English forces in 1879, and one of them was present at the death of the Prince Imperial. They are men of splendid physique, and, in spite of the rigours of the northern climate, very lightly clothed. There was at Antwerp a celebrated wrestler called Jan Moors, who was the champion of Belgium and boasted that he had never been thrown. The Zulus went to see him, and one of them named Ushellern accepted the professional wrestler's challenge. After a short struggle the Zulu warrior threw the celebrated Flemish champion, much to the surprise of the spectators. The Zulus are fed on maize and meat, which they cook themselves in their own fashion, and since they have been in Europe they have gained flesh and enjoyed excellent health. Then there is a second edition of Buffalo Bill, only this time it is Pawnee Bill. He has brought over from America 150 performers, comprising forty Pawnee and Sioux Indians. Here again are magnificent specimens of the primitive races. They live in tents on low-lying, damp ground, they perform in all weathers, sometimes knee deep in mud, and yet remain healthy and strong. Well may they become objects of envy to the pallid, sickly inhabitants of our great manufacturing centres. But without going to see the Red Indians or the swarthy Zulus for examples of physical strength and healthy exercise, there is also a Boyton's water show, where European divers and swimmers give an inspiriting spectacle of manly hardihood and skill.

From all this it will be seen that the Antwerp Exhibition is not wanting in those qualities that will render it both instructive and amusing to visitors. Antwerp has also the advantage of being easily accessible from England. There are every evening magnificent steamers that sail for Antwerp from Harwich and land their passengers within a stone's throw of the exhibition grounds. These steamers are fitted up like Atlantic liners, they are more than 1000 tons burden. One vessel is 1635 tons, and they cross the sea in six hours. The return ticket, first class, from London costs only £2 or £1 10*s*., according to the time for which it is available; and, considering the luxurious accommodation afforded, this is one of the most inexpensive trips that can be taken. Already there are many more visitors at the exhibition than there were at the corresponding season in 1885, when the last Universal Exhibition was held at Antwerp. Doubtless with an improvement in the weather this success will become more and more marked.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

THE following is the text of the Regulations of the Council (Section 24) relating to the meetings of Members, as prepared by the President and Vice-Presidents, in pursuance of the resolution of the Council on the 14th ult., and approved and adopted:—

1. The meetings of Members will be for consultative purposes only, and can have no official or corporate character or efficacy.

2. Meetings shall be summoned by the Council at such times and for such objects as may by the Council be thought desirable, either with or without a requisition from the Members.

3. Such requisition must be signed by at least thirty Members and contain a statement of the object or objects for which the meeting is requested.

4. The subjects to be considered shall be: (*a*) matters referred to the meetings by the Council; (*b*) motions introduced by Members.

5. The motions introduced by Members—(*a*) shall be signed by the mover or by the mover and other Members; (*b*) must be received by the secretary not less than fourteen days before the meeting.

6. The President shall determine what motions are in order and direct the arrangement of the agenda.

7. The quorum of each meeting shall be thirty, and if at the expiration of fifteen minutes from the hour for which the meeting has been summoned a quorum be not present the meeting shall not take place. If after the commencement of the meeting it shall be found upon a count that a quorum be not present the meeting shall be dissolved.

8. The President or one of the Vice-presidents, or in their absence the senior member of the Council present, shall be chairman of the meeting, and the chairman's decision shall be final upon all points of order which may arise.

9. The secretary or his representative—(*a*) shall act as secretary in relation to the business of the meetings; (*b*) shall give notice by advertisement of each meeting and shall issue a copy of the agenda to each Member who may apply for one within the fourteen days preceding the meeting; (*c*) shall keep minutes of the proceedings.

APPEAL BY THE CIVIL RIGHTS DEFENCE COMMITTEE ON BEHALF OF THE ANDERSON FUND.

WE are asked by Lord Stamford, on behalf of the committee of public bodies formed to enable the rights involved in Mr. Anderson's Privy Council appeals to be brought to the review and decision of the Judicial Committee, to intimate that the necessary arrangements have been completed, and that the subscription-list for this purpose for the medical profession is now open. With the view of saving unnecessary secretarial expenses it is particularly requested that subscriptions may be paid to the manager of the Chancery-lane Branch of the Union Bank, Chancery-lane, London, E.C. Cheques or post-office orders should be crossed and made payable to the "Anderson Appeal Fund" account. Formal receipts will be returned, and the list of subscribers will be published in our columns.

A pamphlet has been printed showing the constitution of the committee, the rights involved, the history and position of the cases to be made the subject of appeal, and the proceedings which led to the formation of the committee. Copies of this pamphlet may be obtained gratis on application to the secretaries of the Civil Rights Defence Committee, care of Mr. Walter Monnington, 7, Fig Tree-court, The Temple, London, E.C.

The cost of the proceedings in connexion with these appeals to the Privy Council on the lines set forth in the pamphlet, and having regard to the magnitude of the question involved, is estimated at £1000.

Mr. Anderson's case constituted a prominent feature in the inquiry into the administration of justice in the colony of Trinidad and Tobago, held in the year 1892 by Sir William Markby and Sir Frederick Pollock, which resulted in the removal from office of the Chief Justice (the late Sir John Gorrie) and of the first puisne judge (Mr. John Cook). Against the latter Mr. Anderson recovered a verdict for £500 damages on May 4th last, after a week's trial before the late Lord Coleridge and a special jury, the trial being the last one presided over by the late Lord Chief Justice, who entered judgment in favour of the defendant, Mr. Cook, notwithstanding the verdict of the jury in favour of Mr. Anderson in the following remarkable terms: "The jury find that the defendant Cook oppressively and with malice overstrained his judicial powers to the prejudice of the plaintiff and the wilful perversion of justice, and found a verdict for the plaintiff for £500."

Against this judgment Mr. Anderson has appealed to the Court of Appeal and was heard in person by Lord Esher and Lords Justices Kay and A. L. Smith on the 19th, the case being adjourned for consideration, and, if necessary, for further argument. It cannot be too distinctly or strongly stated that the proceedings in the Court of Queen's Bench in England against Mr. Cook (even if Mr. Anderson should ultimately succeed in reversing Lord Coleridge's judgment and recovering the damages awarded to him by the jury) will in no way relieve Mr. Anderson from the consequences of the judgments given against him by the late judges of the colony. It is therefore absolutely necessary for him to appeal to the Privy Council for the purpose of reversing the judgments which now stand against him.

Lord Stamford and the committee wish to refer with pleasure, we are asked to state, to the subjoined list of subscriptions with which the fund is opened, and to the many expressions of sympathy, concern, and indignation received in response to the invitation to express opinions on the subject which the committee will shortly publish, and which strongly support the action of the committee and the views taken of the public and professional importance of the rights involved. These, briefly stated, are:—

A. ESPECIALLY AFFECTING THE MEDICAL PROFESSION.

1. The right of medical men—as of all other men—to control the disposal of their services and to make terms for them. 2. The right (not having undertaken any particular obligation) to discontinue attendance on a patient should circumstances appear to render such a course advisable, corresponding to the right of the patient to dispense with the services of his medical attendant.

Much and widespread misconception exists as to these rights; and it is stated that by the judgments given Mr. Anderson was deprived of them.

B. OF GENERAL AND PUBLIC INTEREST.

1. The right of the subject to enjoy his peace free from the illegal institution of vexatious suits, the right to give evidence in his own behalf, and the right to recover and enjoy the possession of his property—of all of which, it is alleged, Mr. Anderson was, and is, deprived. 2. The right to freedom from illegal arrest and immoderate and excessive bail in civil suits. 3. The right to the writ of *habeas corpus* in cases of illegal imprisonment and excessive bail. 4. The right to prompt decisions of courts of law in cases involving the liberty of the subject.

The secretaries and councils of the several public bodies represented on the committee are invited to coöperate by opening subscription lists, and a supply of the statement and history of the cases will be sent to them. It is decided that the amount of individual subscriptions shall not exceed one guinea, in order that the number of subscriptions may indicate the importance attached by medical men to the rights involved.

As intimated above, it is particularly requested that subscriptions should be paid directly to the manager of the Chancery-lane branch of the Union Bank, Chancery-lane, London, E.C., and that cheques or Post-office orders be crossed and made payable to the "Anderson Appeal Fund" account.

The following subscriptions have been received or promised:—

	£	s.	d.
The Right Hon. the Earl of Stamford	1	1	0
The Right Rev. Bishop Mitchinson	1	1	0
Sir Joseph Lister, Bart., F.R.S.	1	1	0
Sir George Johnson, F.R.S.	1	1	0
Dr. Alderson, London ...	1	1	0
Dr. Anderson, C.I.E., London	1	1	0
Mr. Anderson, London ...	1	1	0
Dr. Anningson, Cambridge	1	1	0
Mr. Balding, Royston ...	1	1	0
Professor Barner, London	1	1	0
Mr. Barling, Birmingham	1	1	0
Dr. Barlow, London ...	1	1	0
Dr. Fancourt Barnes, London	1	1	0
Mr. Bartlett, London ...	1	1	0
Dr. Bastian, F.R.S. ...	1	1	0
Dr. Beale, F.R.S., London	1	1	0
Dr. Bennett, Dublin ...	1	1	0
Mr. Black, London ...	0	5	0
Dr. Blacker, London ...	1	1	0
Dr. Blandford, London ...	1	1	0
Mr. Brodhurst, London ...	1	1	0
Mr. Brook, Fareham ...	0	10	6
Dr. Bullock, London ...	1	1	0
Dr. Butlin, London ...	1	1	0
Mr. St. Clair Buxton, London	1	1	0
Dr. Lauder Brunton, F.R.S., London	1	1	0
Mr. Campbell, Saddleworth	1	1	0
Dr. Carline, Lincoln ...	1	1	0
Dr. Carter, Liverpool ...	1	1	0
Professor Chiene, Edinburgh	1	1	0
Mr. Clutton, London ...	1	1	0
Professor Corfield, London	1	1	0
Mr. Anderson Critchett, London	1	1	0
Dr. Ward Cousins, Portsmouth	1	1	0
Mr. Durham, London ...	1	1	0
Dr. Eastes, Folkestone ...	1	1	0
Dr. Eddowes, London ...	1	1	0
Mr. Hurry Fenwick, London	1	1	0
Mr. Field, London ...	1	1	0
Mr. Foulerton, London ...	1	1	0
Mr. Frost, London ...	1	1	0
Mr. Gay, Putney ...	1	1	0
Dr. Gonde, London ...	1	1	0
Dr. Greenwood, London ...	1	1	0
Dr. Haig, London	1	1	0
Prof. Halliburton, F.R.S., London	1	1	0
Mr. Hamilton, Chester ...	1	1	0
Dr. Hare, London	1	1	0
Mr. Haslam, Birmingham	1	1	0
Dr. Haynes, Malvern ...	0	10	6
Dr. Hebb, London	1	1	0
Dr. Heron, London ...	1	1	0
Dr. Herringham, London	1	1	0
Mr. Horsley, F.R.S., London	1	1	0
Dr. Wharton Hood, London	1	1	0
Mr. Howse, London ...	1	1	0
Mr. Halke, London ...	1	1	0
Mr. Hutchinson, London	1	1	0
Mr. Jackson, Sheffield ...	1	1	0
Dr. Johnson, London ...	1	1	0
Mr. Juler, London ...	1	1	0
Dr. Norman Kerr, London	0	10	6
Dr. Keser, London ...	1	1	0
Mr. Knaggs, Huddersfield	0	5	0
Dr. Lawford, London ...	1	1	0
Messrs. Lee, Coerar & Co., London	3	3	0
Mr. Jordan Lloyd, Birmingham	1	1	0
Dr. Lockie, Carlisle ...	1	1	0
Mr. Lund, Manchester ...	1	1	0
Mr. McCarthy, St. George's, Shropshire ...	1	1	0
Dr. Mackenzie, London ...	1	1	0
Dr. Martin, Sheffield ...	1	1	0
Mr. Meade, Bradford ...	1	1	0
Mr. Mercier, London ...	1	1	0
Mr. Merriman, London ...	1	1	0
Dr. Moore, Dublin ...	0	10	0
Mr. Morris, London ...	1	1	0
Mr. Mummery, London ...	1	1	0
Mr. Monnington, London	1	1	0
Dr. Morton, London ...	1	1	0
Mr. Nettleship, London ...	1	1	0
Dr. O'Neill, Belfast ...	1	1	0
Mr. Parker, London ...	0	10	6
Mr. Parkinson, Wimborne	0	10	6
Dr. Parsons, London ...	1	1	0
Dr. Philipson, Newcastle-on-Tyne	1	1	0
Dr. Renshaw, Ashton-upon-Mersey	1	0	0
Mr. Mayo Robson, Leeds	1	1	0
Dr. Ruffer, London ...	1	1	0
Dr. Russell, London ...	1	1	0
Dr. Sansom, London ...	1	1	0
Dr. Saundby, Birmingham	1	1	0
Dr. Savage, London ...	1	1	0
Dr. Semon, London ...	1	1	0
Mr. Shadwell, Walthamstow	1	1	0
Mr. Morton Smale, London	1	1	0
Mr. Noble Smith, London	1	1	0
Mr. T. Smith, London ...	1	1	0
Dr. Somerville, Galashiels	1	1	0
Dr. Spencer, London ...	1	1	0
Dr. Danford Thomas, London	1	1	0
Mr. Thompson, Launceston	1	1	0
Mr. Pridgin Teale, Leeds...	1	1	0
Dr. Thorowgood, London	0	10	0
Mr. Tweedy, London ...	1	1	0
Mr. Walker, Liverpool ...	1	1	0
Dr. White, London ...	1	1	0
Mr. Wilkin, London ...	1	1	0
Mr. Williams, London ...	1	1	0
Dr. Woakes, London ...	1	1	0
Dr. Wolfenden, London ...	1	1	0
Dr. Woods, London ...	1	1	0
Dr. Younger, London ...	1	1	0

THE REPORT OF THE LUNACY COMMISSIONERS AND THE ALLEGED INCREASE OF INSANITY.

ON Jan. 1st of this year there were in England and Wales 92,067 lunatics, idiots, and persons of unsound mind. Of this number 8311 (4052 males and 4259 females) belonged to the private class, 83,025 (37,237 males and 45,788 females) to the pauper class, and 731 (545 males and 186 females) to the criminal class of lunatics. The total number consisted of 41,834 males and 50,233 females, and it is 2,245 in excess of the corresponding number on Jan. 1st, 1893, this being the largest annual increase in the number of officially known lunatics that the Commissioners have yet had to record. This large increase of 2,245 is made up of an increase of 111 in the private, of 2,132 in the pauper, and of 2 in the criminal class; and, as the Commissioners say, it calls the more for some special consideration because it follows an increase of 1974 in the preceding year, that being far above the average for the ten years 1882 to 1892, which was only 1300.

An exceptional and serious increase manifested itself in the number of pauper lunatics in the county of London, inasmuch as it rose during the year by 800, the average annual increase for the previous ten years being 308. Fortunately the Commissioners are able to regard some portion of this increase as "abnormal," and explainable to some extent by local and exceptional circumstances, the most important of which was that when in 1892 and 1893, by increase of asylum accommodation, a large provision of beds became available there was an influx into the asylum wards of many insane poor who had been detained longer in their homes than they would have been if there had been vacancies for them in their own local asylums. Apart from the county of London and the administrative county of Middlesex, in which there was an excessive increase (viz., 103, against an average for the previous ten years of 43), the increase seems to have been fairly general throughout England and Wales; and we think it is only reasonable to infer that some portion of it may have arisen out of circumstances similar to those under which the increase for the county of London is stated to have occurred. In seeking for some further explanation of the increase the Commissioners point to a recovery rate and a death-rate in 1893 lower than the average—an addition of some 360 to the ordinary annual accumulation of pauper patients in the asylums being the result of the operation of these two factors.

Some important figures bearing on the general question of the increase of insanity in the country are given in Table III., wherein is shown the ratio (per 10,000) of admissions to the whole population, only fresh cases being taken, as far as possible. Taking the years 1885 to 1893, the ratio in the case of private patients has remained nearly constant, having been 0·70 in 1885 and 0·65 in 1893, with a mean of 0·66; but in regard to pauper patients the ratio has progressively increased from 4·14 per 10,000 of the population in 1885 to 5·28 in 1893. The opinion of the Commissioners on this progressive increase is given in the following quotation from their report:—

"At first sight this would seem to be strong evidence of increasing insanity among the poorer classes of the general population, but it is, in fact, proof only that larger numbers of the insane are yearly brought within official cognisance; and we remain of the opinion expressed in former reports that there is no disproportionate increase of insanity, or at all events none at all material, in this country. The increase in the number of officially known lunatics is a very different thing, and is due mainly, if not altogether, to accumulation resulting from diminished discharge-rate, as has been well shown in the general report of the Registrar-General on the recent census. From this report also we learn that the increase in the total number of enumerated lunatics in the census of 1881 over the number in 1871 was 15,484, while the corresponding increase in 1891 over 1881 was only 12,880, being a diminution of 2600 in the decennial increase, and this diminution, occurring contemporaneously with an increase of the general population, would seem to support the opinion we have above expressed. The accumulation has been aggravated by (with other causes) the change of feeling which has undoubtedly occurred in the poorer classes, and which now leads them, without reluctance, to see placed in asylums insane and mentally worn-out members of their families whom they would formerly have retained in their homes."

We have quoted this expression of opinion on the part of the Lunacy Commissioners in full, as it sums up in a condensed form the conclusion at which they have arrived after a study of the best and most complete information as to the merits of this vexed question. We must take it, therefore, that the increase of insanity in this country is not only not "alarming," as is so often stated paragraphically, but is not at all material. The ratepayer who remembers that nowadays 83,000 pauper lunatics have to be maintained as against the 61,600 of a quarter of a century ago may not, indeed, find much that is comforting in this fact as elucidated by the Commissioners; he may be driven to seek consolation in the reflection that it might be worse. Socially speaking, it is reassuring to be told on good authority that no material or disproportionate increase of insanity is taking place in our midst. If we do not get all the solace that we would like out of this statement of the case, it is at least satisfactory to know that year after year the increasing numbers are brought under official cognisance and care, because therein we have the best assurance that the insane are not neglected, but receive the attention which is most calculated to promote their recovery. It is not, we trust, too much to hope that the day will come when the organised and skilled forces now at work coping with one of the saddest of human diseases may be able to demonstrate more completely the success of their operations.

CHOLERA.

SINCE our last report we are unable to chronicle any improvement in the progress of the epidemic. The outbreak in St. Petersburg this year is stated to have been more intense and fatal than in those of the two previous years. The first manifestations of the disease—which has penetrated into Finland—appeared at Cronstadt, but it had been for some time present in Poland. It is also stated to have reached the military camp at Krasno-Selo and the province of Esthonia. It has been announced that in consequence of the prevalence of cholera at St. Petersburg the customary manœuvres near the capital and the mobilisation of the reserves will not take place. The daily number of cases recorded may be approximately stated as 200, with a death-rate among those attacked of about 50 per cent. There were altogether about 1000 cholera cases in hospital on the 20th inst. Great heat seems to have prevailed recently at St. Petersburg. The sanitary board of that city and its representatives have been very active of late in their efforts to check the epidemic outbreak, which has been actively prevailing for more than three weeks, but according to the latest reports now shows signs of declension. A serious increase in the number of cases took place after the 14th inst. According to an official bulletin published on the 21st there had been 1292 cases and 584 deaths since the 15th, as against 375 and 294 respectively for the previous six days. The following figures give the number of cases and deaths from cholera in the various governments between the 8th and 14th instant: St. Petersburg, 247 cases and 34 deaths; Warsaw, 157 cases and 77 deaths; Kovno, 76 cases and 27 deaths; Novgorod, 1 case and 1 death; Tula, 1 case. Between the 1st and 14th inst. there were 32 cases and 15 deaths in the government of Grodno, and 243 cases and 143 deaths in Radom; while between the 1st and 7th inst. there were 11 cases and 8 deaths in Courland, 2 cases and 1 death in Livonia, 10 cases and 3 deaths in Petrikoff, and 47 cases and 16 deaths in Plotzk.

From Berlin we learn that a few cases have occurred among the raftsmen on the Vistula, and that 1 case had been admitted into the Moabit Hospital, and six soldiers suffering from choleraic disease have been taken to the military hospital at Thorn. A bargeman on the Spree at Charlottenburg, below Berlin, is stated to have died of cholera, and a fatal case of suspected cholera occurred in the hospital at Dantzic.

From Vienna it is reported that numerous cases have occurred in the district of Galicia and in that of Bukowina;

but the disease seems to have greatly diminished or altogether disappeared in the city of Cracow. The Danubian States are acting in concert in taking sanitary precautions against the importation of cholera from Russian provinces.

The disease also prevails to a slight extent in several communes in Belgium, especially at Jemeppe. Eight cases of cholera have occurred at Liège since Saturday last.

From Constantinople it is reported that several cases of cholera have occurred at Adrianople, and that the disease had since spread in a way to cause much apprehension.

Intelligence from Paris states that a death from cholera had taken place at Avignon.

The subject of the Mecca pilgrimages has very naturally attracted a good deal of attention of late. The terrible loss of life that occurred last year and the scandalous disregard of all sanitary and common-sense precautions are well known; and the continuance or the recurrence of such a state of things is a question of grave international importance as the delegates to the late Paris Conference did not fail to discern. Things were somewhat better this year. The number of pilgrims was comparatively small, no cholera epidemic was raging at the time, and the sanitary arrangements in Mecca had somewhat improved, but there still seems to be a lamentable want of sanitary establishments and proper provision for these pilgrimages on shore and a dangerous amount of overcrowding on board the vessels conveying the pilgrims. Notwithstanding that there was no epidemic or cholera outbreak this year the mortality among the pilgrims on shipboard was still very large.

THE BRITISH INSTITUTE OF PUBLIC HEALTH.

CONGRESS IN LONDON.

AT the Congress of the British Institute of Public Health held in the University of Edinburgh last year the Lord Mayor of London proposed, and the Lord Provost of Edinburgh seconded, that London should be chosen as the place of the next meeting for the Congress of the Institute, and Professor William R. Smith, M.D., of King's College, was appointed at a general meeting of the Institute as the President-elect.

The Council of the Institute took the arrangements in hand for the Congress, appointed a reception committee, and were fortunate in obtaining the consent of the Lord Mayor of London to act as honorary president of the Congress and as chairman of the reception committee. Invitations to attend the Congress were issued from the Mansion House in February last, and all the sanitary authorities in the kingdom were asked to nominate delegates to be present at the meeting. In response to this invitation between 1500 and 2000 delegates were appointed to attend the Congress. Judging from the enormous attendance at the opening of the Congress at the Mansion House, it would appear that those who had foregone the invitation comprised but a small number. The Local Government Board have decided that the expenses of those attending this Congress may be payable out of the rates under the terms of a recent order.

At the reception held at King's College on Wednesday last some 2000 guests were received by Dr. Littlejohn, the President of the Institute, and Sir Charles A. Cameron (medical officer of health of Dublin), Vice-President. All the workshops and the laboratories of the College were open for inspection. The band of the Artists' Volunteer Corps played in the hall.

The meeting at the Mansion House on Thursday was a great success, both in numbers and in the distinction of the audience. A procession was formed which included members of the council and officers of the Congress, a considerable number of mayors from provincial towns, the President of the Institute, the President-elect, the Lord Mayor, and the Sheriffs, all wearing official or academic robes. The Lord Mayor took the chair and welcomed the delegates. The President of the Institute (Dr. Littlejohn), after a few remarks, formally installed Professor Smith as his successor in office. A vote of thanks to the retiring President was proposed by Dr. Wace and seconded by Sir Chas. Cameron. Dr. Cameron Lees of St. Giles, Edinburgh (Dean of the Thistle), also spoke. Dr. Littlejohn was appointed a Vice-President of the Institute for life.

Professor Smith then read his address, dealing with the question of Local Government in London. He favoured the diminution of the authority and power of local sanitary authorities and deprecated the abolition of the Metropolitan Asylums Board. He further made some suggestions for the improvement of local government work in London. Speaking of the report of the Asylums Board presented on May 8th, he said: "The report advises that the Asylums Board should be abolished, and its functions, so far as they relate to the treatment of infectious disease, transferred to the London County Council. The grounds upon which this recommendation was based were in the main twofold: firstly, that the Asylums Board was not directly elected by the ratepayers; and, secondly, that the London County Council was in many respects the central public health authority, and that therefore it should be entrusted with the duty of infectious hospital accommodation and management. I may say at once that I do not think those are sufficient reasons for effecting such an important and radical change as is suggested. What is generally understood as popular elections are all very well, and under certain conditions very desirable; but, in my judgment, such a form of election to a board which has practically solely to do with the very special duty of hospital construction and management would result in the very men whom it is most desirable to secure not coming forward, for I question whether generally they would submit to the necessary work to secure election."

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Northampton Urban Sanitary District.—We are glad to see that Mr. Lee Cogan in his annual report appreciates the difficulties of dealing with phthisis as with the ordinary infectious diseases, and, while being fully alive to the necessity of controlling the disease, he states "it would be inhuman and cruel to subject the unhappy victim of consumption to a life of complete social extinction." In describing the steps taken in Northampton under the Factory and Workshops Act Mr. Cogan refers to the impracticability of obtaining proper ventilation in the workshops apart from artificial ventilation owing to the practice of the workpeople of closing all windows and crevices to avoid draughts. Certainly it is extremely difficult in small workshops to obtain anything like efficient ventilation by means of the windows and doors. With respects to the sewers in Northampton Mr. Cogan advises proper flushing and cleansing, and, he adds, "to attempt to minimise the sewer-smelling nuisance by chemical disinfection is useless."

Stroud Urban Sanitary District.—The importance of making a careful house-to-house inspection in the neighbourhood on the occurrence of a case of small-pox is well illustrated by Mr. Thomas Partridge's annual report for the above district. He states that on the first case of a localised outbreak being notified he made inquiries and discovered six other cases distributed in five houses; all of them had been regarded by the patient's friends as "eczema."

Cardiff Rural Sanitary Authority.—In alluding to the precautions taken in the district to prevent the spread of disease Dr. Richard Pritchard refers to the difficulty of thoroughly disinfecting a house after a case of infectious disease. As he remarks, the difficulties are increased when a patient has been allowed to wander over the house while still in an infectious condition. The question, of course, arises as to whether any disinfection, short of all the rooms &c. into which the patient went after being attacked, can be considered adequate, and whether, in fact, sufficient disinfection is generally performed.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6012 births and 3331 deaths were registered during the week ending July 21st. The annual rate of mortality in these towns, which had been 16·1 and 15·9 per 1000 in the preceding two weeks, rose again last week to 16·6. In London the

rate was 16·8 per 1000, while it averaged 16·4 in the thirty-two provincial towns. The lowest rates in these towns were 9·8 in Cardiff, 11·0 in Hull, 11·7 in Gateshead, 11·9 in Bolton, and 12·0 in Bristol; the highest rates were 19·1 in Halifax, 21·5 in Sunderland, 22·0 in Salford and in Preston, and 23·5 in Liverpool. The 3331 deaths included 591 which were referred to the principal zymotic diseases, against 476 and 497 in the preceding two weeks; of these, 241 resulted from diarrhœa, 136 from measles, 82 from whooping-cough, 57 from diphtheria, 46 from scarlet fever, 26 from "fever" (principally enteric), and 3 from small-pox. The lowest death-rates from these diseases were recorded in Swansea, Huddersfield, Halifax, and Plymouth, and the highest rates in Nottingham, Liverpool, Salford, and Sunderland. The greatest mortality from measles occurred in Croydon, Bristol, Salford, Nottingham, West Ham, and Sunderland; from scarlet fever in Derby; from whooping-cough in Gateshead and Nottingham; and from diarrhœa in Birkenhead, Liverpool, London, Leicester, and Norwich. The 57 deaths from diphtheria included 36 in London and 2 each in West Ham, Croydon, Portsmouth, Birmingham, and Liverpool. One fatal case of small-pox was registered in London, 1 in Oldham, and 1 in Bradford, but not one in any other of the thirty-three large towns. There were 79 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 21st inst., against 132, 109, and 97 at the end of the preceding three weeks; 10 new cases were admitted during the week, against 16, 28, and 17 in the preceding three weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2193, against 2087, 2099, and 2143 on the preceding three Saturdays; 264 new cases were admitted during the week, against 266 and 277 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had been 162 and 158 in the preceding two weeks, further declined to 124 last week, and were 61 below the corrected average. The causes of 52, or 1·6 per cent., of the deaths in the thirty-three towns were not certified, either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Bristol, Leicester, Nottingham, Newcastle-upon-Tyne, and in eleven other smaller towns; the largest proportions of uncertified deaths were registered in Portsmouth, Birmingham, Sheffield, and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had declined in the preceding three weeks from 16·9 to 15·4 per 1000, rose again to 16·9 during the week ending July 21st, and exceeded by 0·3 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 6·9 in Perth and 12·5 in Greenock to 18·7 in Dundee and 25·1 in Paisley. The 481 deaths in these towns included 19 which were referred to diarrhœa, 11 to measles, 8 to diphtheria, 4 to small-pox, 3 to whooping-cough, 2 to scarlet fever, and 2 to "fever." In all, 49 deaths resulted from these principal zymotic diseases, against 55 and 56 in the preceding two weeks. These 49 deaths were equal to an annual rate of 1·7 per 1000, which was 1·2 below the mean rate last week from the same diseases in the thirty-three large English towns. The 19 fatal cases of diarrhœa showed a further increase upon the numbers recorded in recent weeks, and included 10 in Glasgow. The deaths from measles, which had been 7 and 13 in the preceding two weeks, declined to 11 last week, of which 4 occurred in Glasgow, 4 in Edinburgh, and 2 in Perth. The fatal cases of diphtheria, which had declined from 7 to 5 in the preceding three weeks, rose again to 8 last week, and included 2 in Glasgow, 2 in Dundee, and 2 in Paisley. Of the 4 deaths referred to small-pox, 3 were recorded in Edinburgh and 1 in Leith. The 2 fatal cases of scarlet fever occurred in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 57 and 6 in the preceding two weeks, further rose to 75 last week, but were slightly below the number in the corresponding week of last year. The causes of 30, or more than 6 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 17·6 and 18·0 per 1000 in the preceding two weeks, declined again to 17·4 during the week ending July 21st. During the past three weeks of the current quarter the death-rate in the city has averaged 17·7 per 1000, against 16·3 in London and 14·9 in Edinburgh. The 117 deaths registered in Dublin during the week under notice showed a decline of 4 from the number in the preceding week, and included 14 which were referred to the principal zymotic diseases, against 5 and 6 in the preceding two weeks; of these, 6 resulted from diarrhœa, 4 from "fever," 1 from small-pox, 1 from measles, 1 from scarlet fever, 1 from whooping-cough, and not one from diphtheria. These 14 deaths were equal to an annual rate of 2·1 per 1000, the zymotic death-rate during the same period being 3·7 in London and 1·5 in Edinburgh. The fatal cases of diarrhœa, which had been 4 and 1 in the preceding two weeks, rose again to 14 last week. The 4 deaths referred to different forms of "fever" exceeded the numbers recorded in recent weeks. The fatal case of small-pox was the first from this disease that has been registered within the city since March, 1888. The 117 deaths in Dublin last week included 22 of infants under one year of age, and 26 of persons aged upwards of sixty years; the deaths of infants showed a slight increase, while those of elderly persons were below those recorded in any recent week. Four inquest cases and 3 deaths from violence were registered; and 40, or more than a third, of the deaths occurred in public institutions. The causes of 6, or nearly 5 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE ARMY MEDICAL STAFF.

LEAVE of absence from Netley on urgent private affairs, with permission to travel in France, has been granted to Surgeon-Lieutenant-Colonel Campbell from the 27th inst. to Sept. 25th; leave from Netley has also been granted to Surgeon-Captain R. H. Firth from the 31st inst. to Aug. 21st, and to Surgeon-Captain M. L. Hearn, A.M.S., from the 17th inst. to Sept. 8th.

INDIA AND THE INDIAN MEDICAL SERVICES.

The following appointments are announced:—Surgeon-Colonel E. C. Markey, C.B., A.M.S., to be Honorary Surgeon to the Viceroy. Surgeon-Captain C. C. Cassidy, Officiating Civil Surgeon of Darbhanga, to do general duty at the Presidency until further orders. Surgeon-Captain E. H. Brown, Officiating Deputy Sanitary Commissioner, Metropolitan and Eastern Bengal Circle, to be Civil Surgeon of Darbhanga. Surgeon-Captain B. C. Oldham to act as Deputy Sanitary Commissioner, Metropolitan and Eastern Bengal Circle, until further orders. Surgeon-Captain F. C. Clarkson, Officiating Deputy Sanitary Commissioner, Western Bengal Circle, to act as Civil Surgeon of Nadia until further orders. Surgeon-Captain J. C. S. Vaughan to act as Deputy Sanitary Commissioner, Western Bengal Circle, until further orders. Surgeon-Captains H. Herbert and J. L. T. Jones, M.B., have respectively delivered over and received charge of the Kaira Gaol. Surgeon-Lieutenant W. Carr Sprague and Surgeon-Captain H. Herbert have respectively delivered over and received charge of the Rajket Gaol. Surgeon-Captain J. F. Evans, M.B., I.M.S. (Bengal), Officiating Chemical Examiner and Professor of Chemistry in the Medical College, Calcutta, is confirmed in that appointment. Brigade-Surgeon-Lieutenant-Colonel Roe will shortly be confirmed as Sanitary Commissioner in the Punjab. The Queen has approved of the following promotion in the Madras Medical Establishment: Surgeon-Colonel C. Sibthorpe to be Surgeon-Major-General. Her Majesty has also approved of the retirement from the Service of the undermentioned officer of the Madras Medical Establishment: Surgeon-Major-General William Frederick De Fabeck.

NAVAL MEDICAL SERVICES.

The following appointments are announced:—Surgeons: Joseph H. Whelan, to the *Warspite* (temporarily); F. E. Rock, to the *Traveller* (lent); F. H. A. Clayton, to the *Dryad*; and R. D. Jameson, to the *Magnet*.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Arthur C. Keep, M.D., having resigned his Volunteer appointment, ceases to be an officer of the Army Medical Reserve of Officers.

VOLUNTEER CORPS.

Artillery:—1st Devonshire (Western Division Royal Artillery): Surgeon-Lieutenant C. F. Rudd resigns his

commission.—*Rifle:* 1st Lanarkshire: Surgeon-Captain A. Adams, M.D., to be Surgeon-Major.—7th Volunteer Battalion, the Royal Scots (Lothian Regiment): Surgeon-Captain J. L. Crombie to be Surgeon-Major.—12th Middlesex (Civil Service): Eustace Maude Callender, M.D., to be Surgeon-Lieutenant. 1st Volunteeer Battalion, the Loyal North Lancashire Regiment: Surgeon-Lieutenant S. Farmer resigns his commission.

HERR DOWE'S CUIRASS.

The exhibitions that took place in this country and on the Continent of Herr Dowe's bullet-proof cuirass attracted a good deal of attention a short time ago. Although the experimental trials of this invention were reported to have been attended with a considerable measure of success, there were several points which were never satisfactorily cleared up, in regard, for example, to the resistance of the cuirass to penetration, and the dissipation of the energy stored up in the bullet without any injurious results, and, lastly, how such an invention could be made practically applicable to war purposes. For ourselves we never considered it at all likely that the military surgeon's occupation was to be abolished by the invention, and with regard to the other points we entertained considerable misgiving. It appears now, by intelligence from Berlin, that Herr Dowe's cuirass has been completely pierced by the German Government regulation rifle bullets fired at a distance of 600 metres.

SURGEON-MAJOR-GENERAL BROKE SMITH.

Surgeon-Major-General Philip Broke Smith, Principal Medical Officer, Netley, who retired from the service on July 18th, graduated Doctor of Medicine at the University of Edinburgh in 1857, and joined the army as Assistant Surgeon in the same year, attaining the rank of Surgeon-Major-General on Oct. 27th, 1892. Prior to his retirement Surgeon-Major-General and Mrs. Broke Smith were entertained at dinner and afterwards at a ball by the officers of the Army Medical Staff serving at Netley. Surgeon-Major-General Broke Smith made over charge of his appointment at Netley to Brigade-Surgeon-Lieutenant-Colonel Evatt, M.D.

THE ALDERSHOT CAMP.

We are officially informed that a new sanitary committee has just been formed to inquire into the condition of the camp at Aldershot; Major-General Sir W. Butler has been elected president. The other members of the committee are as follows:—Surgeon-Major-General Paterson, Colonel Sir A. Mackworth, R.E., Colonel H. G. Miles, and Major Jessep, R.E. (secretary).

THE MILITIA MEDICAL STAFF CORPS.

The Militia Medical Staff Corps has just finished its third annual training under the command of Surgeon-Major Collingridge, M.D. The three companies already formed for the counties of Hants, Middlesex, and Surrey are up to the establishment, and we understand that there is only one officer short. This compares very favourably with other militia corps, and is not surprising considering the good pay and allowances of this branch of the service.

STRETCHER BEARERS' COMPETITION.

The Challenge Bowl and prizes for stretcher squads of the West London Volunteer Infantry Brigade were competed for on Saturday last at the headquarters of the 20th Middlesex "Artists" Rifle Volunteers, under the direction of Brigade-Surgeon-Lieutenant-Colonel Parsons-Smith. Each squad was examined separately and individually, and besides doing the stretcher drill *viva voce* questions were put in First Aid, Elementary Anatomy &c. The first prize was taken by the 2nd Volunteer Battalion, the Royal Fusileers, who were closely followed by the 2nd Volunteer Battalion, the Middlesex Regiment, to whom the second prize was awarded.

ARMY MEDICAL SCHOOL, NETLEY.

The sixty-eighth session of the Army Medical School, Netley, will terminate on Monday, July 30th, when the prizes will be distributed and an address delivered by Dr. Weir Mitchell.

PRESENTATION.—Mr. R. E. Roth, M.R.C.S.Eng., of Sydney, New South Wales, has been presented by the members of the Sydney Fire Brigades Ambulance Class with a silver-mounted salad bowl and a pair of silver candlesticks, in appreciation of his services as their instructor on first aid.

Correspondence.

"Audi alteram partem."

"SOME COMMON SOURCES OF ERROR IN TESTING FOR SUGAR IN URINE."

To the Editors of THE LANCET.

SIRS,—Sir George Johnson has carried the question regarding sugar in healthy urine into one of quantity, but I must remind him that the question at issue is, Does sugar exist or not in healthy urine? He has given a quotation from Halliburton to the effect that some observers had found sugar and others had not, but omitted to continue the paragraph on to where it is stated, after reference to there being several cupric oxide reducing substances in the urine, that "none of these, however, undergo the alcoholic fermentation on the addition of yeast, and this does take place with the reducing substance of normal urine. (Abeles.)" Negative evidence is of no value against positive, and the position of former times is now strengthened by the evidence obtainable through the medium of the recently introduced phenylhydrazine test. I am, Sirs, yours faithfully,

Grosvenor-street, July 26th, 1894. F. W. PAVY.

To the Editors of THE LANCET.

SIRS,—None of the leading text-books, I believe, mention sulphonal as a drug causing a reaction in the urine with Fehling's solution like that of sugar. The following case illustrates this. A married woman was sent on the s.s. *Coptic* in New Zealand (to which ship I was surgeon) for the voyage home. She was said to have slight signs of phthisis, with which she suffered from extreme debility, sleeplessness, and great thirst. On examining the urine I found a specific gravity of 1026 and obtained the sugar reaction with Fehling's solution. The night before, the patient had taken forty minims of creasote per rectum and fifteen grains of sulphonal by the mouth. Fortunately I did not mention my suspicion of diabetes, but stopped both drugs for two days, and there was no longer any sugar reaction; nor did the resumption of the creasote injections alone produce any reaction; but the fifteen grains of sulphonal always produced it. Considering the great extent to which sulphonal is employed, with and without the medical attendant's knowledge, it is well that this fact should be widely known.

I am, Sirs, yours faithfully,

HAROLD WHICHELLO, M.R.C.S., L.R.C.P., L.S.A.

July 24th, 1894.

THE INCREASED MORTALITY FROM DIPHTHERIA.

To the Editors of THE LANCET.

SIRS,—Having read your interesting leading article on Mr. Shirley Murphy's preliminary report to the London County Council on the above subject, I shall esteem it a favour if you will allow me to contribute a few remarks having special reference to the age incidence of diphtheria and the argument founded thereon that the increased mortality is due to the more strictly enforced school attendance of children of those ages. 1. This argument is scarcely borne out when we consider the gradual increase during recent years in the numbers of children attending schools (chiefly primary) and the rapid augmentation, on the contrary, of the notified cases and the death-rate of diphtheria. 2. If aggregation of children in schools were a prime cause of the increased number of cases and mortality we should expect the latter to be most marked in country districts, where the density at school stands in so much greater contrast with that at home. But it is in large towns (such as London) that the cases and deaths are proportionately most numerous—that is, where the density of the population in a well-built school during school hours is not appreciably greater than in the slums from which the children are drawn. 3. Taking the Registrar-General's annual report for 1892 (the last published), I find that the deaths from diphtheria in England as a whole were 6552, and of these, 5843 occurred under ten years of age; but more than twice as many deaths from diphtheria occurred under five years of age as between five and ten, the numbers being respectively 3936 and 1907. In

London, where the enumerated populations in 1891 differed only as 501,558 to 454,077 at the respective ages, more than three times as many deaths from diphtheria occurred at the earlier age—namely, 1388, as against 447. 4. Without going minutely into the death-rates at the several ages it is abundantly evident that the deaths from diphtheria are comparatively few during the early months of infancy, but become portentous as soon as the children are out of arms. In London the deaths in 1892 were most numerous between one and two; in England as a whole between four and five. Thus, for London the deaths from diphtheria in the five first years of life were 129, 325, 315 322, 297; and for England as a whole 360, 806, 859, 982, 929. 5. Now, on consideration of these facts I would throw out a suggestion—namely, that the infantile love of exploration when a child is first on its own legs, combined with its diminutive height and the consequent nearness of its fauces, even without stooping, to many a source of contagion (say, gullies and open gratings to sewers) may have as much to do with the terrible fatality of diphtheria during the particular years of life referred to as school attendance. We may take it for granted that, *cæteris paribus*, the effect produced by a given source of diphtheritic virus will follow the same law as the effect of any other like cause (say, the heat of the sun)—namely, be about inversely as the square of the distance from the source. When a child is in arms or otherwise confined to some cot it is, comparatively speaking, far removed from harm (except possibly through personal contagion); but as soon as it takes to its own legs its risk of infection from a prime source is enormously increased. Throwing out the suggestion for what it is worth,

I am, Sirs, yours faithfully,

Kingston-on-Thames, July 21st, 1894. D. BIDDLE.

DEFECTIVE HUMANITY UNAIDED BY STATE MEASURES.

To the Editors of THE LANCET.

SIRS,—The lapse of time has shown that the teaching of lunacy in lunatic asylums, strengthened by its enormous literature and aided by well-known established organisations, elegant writers, social reformers, and scholastic methods, has given no proof that these factors have diminished insanity, crime, and discontent. Thus a demand is made on State medicine to seek for methods which will tend to advance a basis for the making of mankind more physiological.

In dealing with the problem for investigation and looking at it from the *locus standi* of a family doctor, the question arises, Have the practitioners of medicine, in their many-sided work, saved many from crime, gaols, and lunatic asylums? If they have, the importance of their work could not be over-rated. It is accepted by the best authorities, such as Sir J. Crichton Browne and Dr. Clifford Allbutt, that they are possessed of keen insight, quick to sift, catch, and check, and from their surroundings are afforded opportunities for detecting arrests of development and abnormalities in the initial stage of life, when prophylactic measures are attended with successful efforts and long before the top dressing of the scholastic. This is why we ask the State to look upon us as the earliest and best detectives. As a control over the production of insanity largely concerns the public in general, so the public ought to be taught by the State that under fixed principles insanity and instability can not only be held in check, but greatly diminished, and that the future destiny of the infant can be regulated by a healthy equilibrium of guiding principles for arresting early indications of feeble-mindedness, insanity, and crime. In dealing with the whole question the field of public medicine is not sufficiently in touch with the well-timed changes for teaching and enlightening the public mind that mental abnormalities can, as well as physical, be successfully dealt with. But the practitioner's psychical work is too limited; all do not take time and trouble to note, digest, and think out their cases. Consequently the work should be made more perfect by State measures. An applied system of jurisprudence, a time-table invested with the stamp of State aid and placed in the hands of practitioners officially bound to keep records of cases as is done in hospitals and dispensaries. In dealing with the interaction of cause and effect during the growth and culture of early life our "green tree" records are possessed of a useful amount of information, and, when practicable, ought to be brought before medical societies for discussion. And the practitioners of medicine as practical psychologists ought to be affiliated through our branches to the Medico-Psychological Association, whose members only number less than 500, and have chiefly to do battle with the "dry tree" cases only.—I am, Sirs, yours truly,

Londonderry, July 23rd, 1894. WALTER BERNARD.

THE SANITARY CONDITION OF WORTHING.

To the Editors of THE LANCET.

SIRS,—Will you kindly allow me to place before the profession as briefly as possible a statement as to the sanitary condition of Worthing at the present time? It will probably be remembered that I have before now publicly stated that the epidemic of last year was caused by running a new heading into an area polluted by long-continued escape of sewage matter from defective drains in the neighbourhood of the waterworks yards, thus contaminating the water of the drinking well. The report (now lying before me) of the medical inspector sent by the Local Government Board entirely confirms this view. I mention this because enteric fever can never again arise in Worthing from this cause. Ever since last September the old water-supply has been cut off for ever for all purposes, and we now have an ample supply of good and pure water from a well to the north of the village of Broadwater. The effect of this change of water was most marked. The epidemic abated immediately and rapidly until the beginning of January, when it was completely stamped out, and there has not been one single case of enteric fever since. The health of the town has been exceptionally good this year, the death-rate for the first six months being only 12·5 per 1000. The deaths registered in the borough this month (July) up to the 15th are only three; one of these was a child aged seventeen days from marasmus, the second a child aged twenty months from tabes mesenterica, and the third a person aged seventy-two years from gangrene and cerebral softening. I have been in practice here upwards of twenty-seven years, and can truthfully say that I have never known the town to be more healthy than it has been this year. It seems to me that there is every prospect of a permanent improvement, because Worthing now has a better and safer water-supply than it has had for many years. A splendidly constructed new main sewer has been laid from one end of the town to the other, under the supervision of the eminent engineer Mr. Mansergh. I should like to enter into a thorough description of the drainage scheme, but it would take up much more space than I have the conscience to ask for. At any rate, I can emphatically affirm that it is much safer to send patients to Worthing now than it ever has been in my recollection.

I remain, Sirs, yours faithfully,

Highworth, Worthing, July 16th, 1894. JOHN GOLDSMITH.

THE PATHOLOGY OF VARIOLA AND VACCINIA.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 19th, in the report of the last meeting of the Pathological Society, allusion is made to my remarks on the above-named subject, but there is omission of an important reference—namely, to Dr. Ludwig Pfeiffer's "Behandlung und Prophylaxe der Blattern," Jena, 1893, a work indispensable to those who wish to follow the newest developments of the subject. I beg, therefore, you will kindly publish this note.—I am, Sirs, yours truly,

Old Cavendish-street, W., July 21st, 1894. J. JACKSON CLARKE.

"HALLUX RIGIDUS."

To the Editors of THE LANCET.

SIRS,—In a contribution to THE LANCET of July 21st on hallux rigidus a very great compliment has been paid me by a very distinguished man—Professor Cotterel, Lecturer on Clinical Surgery at the University of Edinburgh—in so far as he is good enough to state "that a recent article by Mr. Mayo Collier confirms in many respects the views"

which he expressed on the subject in 1867. I would this were so. So far as I am capable of judging, the symptoms, pathology, and treatment of hallux rigidus, as enunciated by Professor Cotterel, have very little or nothing in common with the disease as described by me. Take, for instance, Professor Cotterel's definition "that hallux rigidus, properly so called, consists of an inability to fully corsillex the great toe on its metatarsal bone. If this is the sum and substance of the disease about which Professor Cotterel is writing, then we can scarcely be discussing the same state of things.

I was careful to point out and insist that this disease was more than a mere stiffening or affection of the ligaments, as propounded by most observers, and that complete failure had followed in all cases treatment founded on this pathology. This was the very essence of the whole paper. I maintained that hallux rigidus "properly so-called," was a stiff and painful condition of the metatarso-phalangeal joint of the great toe due to absorption caries from pressure between the sesamoid bones in the tendons of the short flexor and the under aspect of the head of the metatarsal bone. My definition was founded on actual observation, and the eroded heads of the bones are now in my possession and will be exhibited at the Congress at Bristol next week. I pointed out that the position of the foot was consistent with and could be explained by the state of the interior of the joint, as described by me, and was essentially due to the fact that no pressure could be tolerated between the opposing surfaces. The metatarsal bone was flexed on the tarsus to take off or relax the strain of the short flexor; the proximal phalanx was flexed with the same object, and the metatarsal bone was abducted from its fellow for a similar reason. In addition I stated that in all cases I had examined the disease was strictly limited to the points where pressure occurred, and that no other part of the joint, cartilage, ligament, or synovial membrane was affected. Professor Cotterel's facts and arguments, founded on observation and examination of the exterior of the joint do not appeal to me in the face of facts and arguments founded on the observation and examination of the exterior and interior of the joints in an unselected sequence of cases. We naturally differ as widely in treatment as pathology, and I am at a loss to understand why the inoffensive and healthy base of the proximal phalanx should be selected for removal in this disease more than the most distant part of the body.—I am, Sirs, yours faithfully.

Harley-street, W., July 25th, 1894. MAYO COLLIER.

"LARYNGEAL MOTOR ANOMALIES."

To the Editors of THE LANCET.

SIRS,—In answer to Dr. Semon's letter in THE LANCET of July 21st I wish to say that I have the greatest respect for the experiments performed by him in conjunction with Mr. Horsley. I have not belittled any of them. It is true that in one instance I have thought that their interpretation was strained. Therein, I suppose, is my inconsistency. I submit with the utmost deference that demonstrable facts are one thing and opinions are another, and I do not feel under the same compulsion to accept the two. This distinction between facts and opinions belongs to my habitual state of mind—as I think it does to that of most people; and if any penalty attaches to my inability to "grasp the broad fact" of unspecified biological differences it certainly is not this. Finally, as to what Dr. Semon elects to call an error of statement, the statement is a deliberate expression of my opinion—the error is in differing from him. Naturally, he and I take various views as to its gravity, but the phrase he adopts to describe it is needlessly emphatic, and, I think, misleading. By all means let your readers judge for themselves.

I am, Sirs, yours faithfully,

Wimpole-street, W., July 22nd, 1894. JAMES CAGNEY.

*** This correspondence must now cease.—ED. L.

"MEDICAL MISSIONS."

To the Editors of THE LANCET.

SIRS,—An annotation in THE LANCET of June 23rd on the above subject closes with the following sentence: "The fact is, that the public do not quite understand the dual *rôle*." With your permission I should like to briefly explain what is the dual *rôle* of a medical missionary.

It is a matter of common knowledge that in any pioneer work among heathen races, whether it be political, religious, or otherwise, there is almost invariably much difficulty and opposition, often amounting to real physical danger. In some cases this opposition is easily broken down; in others, as in China, the natives look upon a stranger as a "foreign devil" and they do their best to get rid of him. Again, among Mohammedans the people are definitely taught that they will suffer all sorts of pains and penalties if they have anything to do with the Christian teacher, and that it is a righteous, or rather a proper, thing to annoy or even injure him. In such cases the medical missionary may be of the greatest assistance; he may, in fact, be able to carry on efficient evangelistic work where a clergyman would not be tolerated, as was the case in the early days of the Kashmir Mission. All the world over people know that they have bodies, especially if they are in pain or if some member refuses to work properly; but they are not so willing to admit that they have souls. The medical missionary goes to a place with the definite object of caring for their bodies, and teaching them about their need of a Saviour. There is no difficulty in getting at the people; they come, they hear the Gospel, they are treated with love and kindness, and they arrive at the conclusion that the "foreign devil" is not half so bad as he was painted. Besides this power of opening doors fast closed to others, the medical missionary is often of the greatest help in a mission as an adjunct to the ordinary work of preaching and teaching. His special influence ever helps to break down opposition and to gain an entrance into the hearts and homes of the people, and we must also remember that in some places there are considerable numbers of missionaries and their families who would be altogether without medical aid themselves were it not for the presence of the medical missionary. Now, how does the medical missionary work? The native language has, of course, to be learnt, and a clergyman usually gives up his first year entirely for this purpose; but in the case of a medical man it soon gets known that he is in the place, and he has usually to make some arrangements for seeing patients from the first. A house is taken or built, and it is given out that patients will be seen at a certain time, and in due course they assemble. A short service is held in the verandah or waiting-room, and then the medical man sees them one by one and attends to their needs. Later a hospital is usually added, and in course of time there are all the paraphernalia of the same—operating room, store-room, dark room, &c., with perhaps several branch dispensaries in the surrounding district. In addition to the ordinary hospital work there is a certain amount of visiting done, apart from regular itineration in the neighbourhood, and sooner or later there is the training of natives as dispensers and dressers.

There are at the present moment 185 medical missionaries with British qualifications, as compared with 125 in 1890; a good increase, but very many more are needed. The Church Missionary Society, with which I am connected, has twenty-four medical missions, with thirty-two missionaries, but we have received repeated appeals to open others and to send a second man to stations where there is only one at present. With regard to the work done last year in these twenty-four missions, no less than 368,000 out-patients were seen, and 4461 in-patients occupied the beds; the number of operations performed reached 11,324, and though many minor ones are included yet probably almost every operation known to surgery would also be in the list. We want more men and more money to provide all that is necessary for the efficient working of the mission hospitals and dispensaries.

I am, Sirs, yours faithfully,

HERBERT LANKESTER, M.D.,
Secretary, Medical Mission Fund.

Church Missionary House, Salisbury-square, E.C., July 17th, 1894.

DR. WILSON FOX'S PLATES OF DISEASES OF THE LUNGS.

To the Editors of THE LANCET.

SIRS,—Will you permit us, through the columns of THE LANCET, to inform the managers of medical schools in England, the colonies, and America, that there is a considerable number of surplus sets of the coloured plates of Dr. Wilson Fox's Atlas of Diseases of the Lungs. These contain the most perfect representations of morbid states of the lungs ever produced. They will be of great value to every medical school if framed and placed in the museum or post-mortem room. It is, therefore, proposed to give a set to each

medical school the dean or manager of which expresses a desire for one; a certain number will be reserved until October, to give colonial medical schools an opportunity of obtaining them. Each set contains twenty-five coloured plates. Brief descriptions can easily be prepared from the text of Dr. Fox's Atlas and affixed to each plate. The cost of packing and transmission amounts to 1*s.* in the United Kingdom, and 2*s.* 6*d.* for America and the colonies. This sum should be sent, with the application, to Messrs. Mintern Bros., 84, Southampton-row, London, W.C.

We are, Sirs, yours faithfully,

SIDNEY COUPLAND, M.D.
July 24th, 1894. W. R. GOWERS, M.D.

THE UNANSWERABLE ARGUMENT FOR VACCINATION AND REVACCINATION.

To the Editors of THE LANCET.

SIRS,—I imagine that the chief service of Dr. Herbert Goude's too short life was that he continued the work and the testimony of Marson and others at the Highgate Small-pox Hospital which have always been the unanswerable argument against those who decry vaccination. I send you two letters which, I think you will agree with me, are worthy of being put on record. They are answers to letters from myself inquiring chiefly as to three or four points: (1) the continuance or otherwise of Marson's splendid results; (2) as to the occurrence of serious evils *after* or *from* revaccination; (3) the constancy of response to re-vaccination; and (4) the method of revaccination followed at the Highgate Hospital.

The answer on all these points is so absolute and so unequivocal as to be final for all those who are to be influenced by evidence and have any sense of the proportion of evils. If we could be sure of never meeting a case of small-pox of course we might reasonably object to the malaise and the sore arms which show that the operation has been done effectually. But in this casual world wise people will take note of the fate of the one official (a temporary assistant gardener) who refused to be revaccinated took small-pox and died of it.[1] I venture to think, too, that not the least valuable part of Dr. Goude's letter is that in which he describes the method of revaccination—by human lymph from arm to arm. Whether the results from calf lymph will realise the same success remains to be shown.

I am, Sirs, your obedient servant,

July 24th, 1894. J. G. GLOVER.

[COPY, NO. 1.]

Small-pox and Vaccination Hospital, Highgate-hill, Upper Holloway, N., London, May 9th, 1893.

DEAR SIR,—The statement that I made in 1885 that no nurse or other official of this hospital had contracted small-pox, with one exception—that of a gardener who escaped revaccination—holds good to the present date, so that now we have an unbroken record of fifty-eight years during which no nurse or servant has contracted the disease, even in a modified form, and this, too, though the nurses and attendants on the sick have on many occasions accidentally inoculated themselves with variolous matter, thus putting the protection afforded by vaccination to a really crucial test. We have had no injurious effects from revaccination beyond those apparently inseparable from the operation, such as malaise and occasional tardy healing of the vesicles.

Very truly yours,

HERBERT GOUDE.

[COPY, NO. 2.]

Small-pox and Vaccination Hospital, Highgate-hill, Upper Holloway, N., London, May 22nd, 1893.

DEAR SIR,—At present I am very busy, but perhaps later on I may have leisure to embody our experience here in a letter to THE LANCET. With regard to your questions: 1. My staff, both nurses and servants, are invariably revaccinated with humanised lymph, and always, when possible, from *arm* to *arm*. 2. It is seldom that I do not obtain some sort of result from my revaccinations, but when such a case occurs I always, if possible, revaccinate again before allowing the nurse to go on duty. I say if possible because many of our servants, having come direct from the country, have to be revaccinated and sent on duty forthwith. In one or two instances I have had *un*vaccinated ward servants sent to me from the country, whom I have had to vaccinate and send into the wards at once.

Very truly yours,

HERBERT GOUDE.

[1] See Dr. Goude's letter to the *Islington Gazette*, March 3rd, 1885.

THE EXCEPTIONS TO COLLES' LAW.

To the Editors of THE LANCET.

SIRS,—I do not wish to deny Dr. Coutts the "poor consolation" of believing his case "at best a doubtful one," but I certainly consider that it cannot be quoted as an exception to Colles' law until the source of the infection of the child is determined. This being doubtful, the title under which the paper is published is misleading, because it records the "infection of the mother by her own child," who was the victim of "*congenital* syphilis." My other reasons for not considering the case an exception to Colles' law are given in my letter of June 23rd, not one of which is invalidated by Dr. Coutts' answer. He, in fact, replies only to one of my objections—maintaining that the clinical features of acquired and inherited syphilis in infancy are sufficiently distinct to prevent mistakes being made between them. He grants that his experience of acquired syphilis in infancy is "perforce limited," but still he cannot believe that the symptoms of the acquired form "could so closely mimic" the symptoms of the congenital form as were shown in his case. In making this assertion, which, according to his own statement, is rather based on belief than on clinical observation, he ignores the references—which I gave in my letter—to the vast experiences of such men as Hutchinson and Fournier, both of whom have pointed out how easily mistakes might occur in this direction. From Fournier's book, "La Syphilis Héréditaire Tardive," the last chapter of which I may again recommend to Dr. Coutts' attention, I extract the following three paragraphs (translated)—viz.: (1) The various clinical signs which have to be taken into consideration in making the differential diagnosis between hereditary syphilis and the acquired syphilis of infancy, are obtained either from the character of the actual lesions or from the personal appearance of the patient. Of these signs not one is sufficiently distinct to merit the title of pathognomonic (p. 638). (2) Even certain special symptoms which were originally considered as signs indicating hereditary syphilis can be produced by syphilis acquired in infancy (p. 650). (3) The only two reliable diagnostic points are found in (*a*) the previous history of the patient; (*b*) the examination of the patient's entire family history (p. 639).

It is on these two points that Dr. Coutts' case is weakest, because he knows the previous history of the patient by hearsay only, and because the history of the father is negative. I should not again have touched upon Dr. Coutts' interesting, though doubtful, case were I not anxious to learn more about the other two cases which had come under his notice, since the publication of his paper. Cases of this kind, complete and therefore conclusive, are still so rare, that every addition to them must be of the greatest value to medical science. I feel sure that Dr. Coutts would do good service, by either himself giving the desired publicity to these cases, or by prevailing upon his informants to make them known. Perhaps they would now be less unwilling to come forward, knowing that—as I have already stated—their cases would not be the sole exceptions to Colles' law. The publication of any authentic cases of this kind would, I feel sure, be received with great interest by the profession.

I am, Sirs, yours faithfully,

Welbeck-street, July 24th, 1894. GEORGE OGILVIE.

"THE LOSS OF LIFE FROM PREVENTABLE DISEASE."

To the Editors of THE LANCET.

SIRS,—Dr. Kenwood, in his letter to THE LANCET of July 21st, points out that my letter is likely to furnish the erroneous inference that he does not recognise the importance of taking the preventive measure of home isolation in those cases of whooping-cough where it can be effected. I am sorry if such a construction should be placed upon it, especially so as Dr. Kenwood in his letter of June 22nd says that one of the duties of the female inspector would

be to impress upon those in charge of children the steps which must be taken to guard against origin and spread. I was much interested in the plan which he suggested. The important fact remains that something should be done to mitigate this terrible scourge of whooping-cough.

I am, yours truly,

St. Leonards, July 24th, 1894. EDWARD SAMUEL LEE, M.D.

SHORTHAND IN MEDICINE.

To the Editors of THE LANCET.

SIRS,—In order to promote the use of shorthand in medicine it is desirable that a list should be compiled of all those who use it. We would therefore ask each practitioner and student who is acquainted with phonetic shorthand to send his name and address to Dr. Neil, Warneford Asylum, Oxford. A printed copy of the list will be sent to each one whose name appears in it. The preparation of a list of medical phonographers is intended as a preliminary step to such farther measures for mutual encouragement and help as may appear advisable.

We are, Sirs, yours faithfully,

W. R. GOWERS, M.D., F.R.C.P.
EDWARD B. GRAY, M.D.
July 21st, 1894. JAMES NEIL, M.D.

THE CANCER HOSPITAL.

To the Editors of THE LANCET.

SIRS,—I have been somewhat surprised to see in one of your contemporaries, published during the past week, the account of an operation for extroversio vesicæ performed at the Cancer Hospital. Although it is, I believe, generally considered in the profession that the admissions to the Cancer Hospital are not exclusively confined to patients suffering from that disease, still it has been thought that they may have resembled it sufficiently to account for the admission. I cannot, however, find any excuse for the treatment within the walls of that hospital of a congenital malformation when the cases of cancer requiring hospital treatment are so numerous and distressing. Other reasons why such a case should not be treated at that hospital will be apparent to those who have read the account which has induced me to write this letter. The support of the public for that institution has been obtained on the supposition that it is exclusively engaged in the cure or alleviation of cancer, a disease which, like phthisis, always excites the warmest sympathy for its victims. This claim can no longer be brought forward.

I am, Sirs, your faithfully,

July 23rd, 1894. L.S.A.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

Hospital Sunday and Saturday Fund.

THE committee of the Hospital Sunday and Saturday Fund have been enabled by the continued liberality of the public to distribute £10,700 among the medical charities as follows: Royal Infirmary and Lock Hospital, £2461; Royal Southern Hospital, £1712; Northern Hospital, £1498; Dispensaries and District Nursing Society, each £749; Infirmary for Children, £642; Stanley Hospital, £535; Eye and Ear Infirmary, £481 10*s.*; Ladies' Charity and Lying-in Hospital, £428; Consumption Hospital, £321; Hahnemann Hospital, Convalescent Institution, Hospital for Women, St. Paul's Eye and Ear Infirmary, each £214; Cancer Hospital, Home for Incurables, each £107; and Dental Hospital and St. George's Hospital for Skin Diseases, each £28 15*s.*

The Treatment of Insanitary Property.

At an inquiry held on June 5th, before Mr. Arnold Taylor, Local Government Board inspector, at the Townhall, Liverpool, full details were given of the course pursued with regard to insanitary property. It was fully explained by Mr. Bartlett, the chairman of the Insanitary Property Committee. Their policy is to work with the medical officer, to get him from time to time to select a number of the worst houses in the city, taking them from different districts, but at the same time concentrating them as much as possible in two or three localities, so as to get, if possible, the whole of one street or two streets and to take away the whole of the insanitary property within that street or streets. The advantage of this is that the committee are able to dispose of the sites to builders on fairly advantageous terms, which could not be done with part of a street whilst the rest of it was occupied with insanitary houses containing a very undesirable class of inhabitants. The result of this policy has been that a number of builders have been found willing to buy the land as it is acquired and to build upon it what are called four-roomed cottages, these having the same accommodation as the court houses which are pulled down. The court houses generally consist each of a living room, a cellar under it, a bedroom on the first floor, and another on the second floor. Sometimes the cellar is filled up. The rooms being one over the other, and back to back and side to side with similar houses, there is no proper ventilation. The new cottages have four rooms—two on the ground floor and two above. They are built with a minimum of 150 square feet of open space at the back and each has a separate watercloset. As the new houses occupy more than double the space of the old ones only two sanitary four-roomed houses can be built upon the site of every five insanitary houses pulled down. The committee also make it part of their policy to widen every street, so as to make each at least thirty feet wide. By this mode of procedure they have every reason to expect that sanitary dwellings will be raised to accommodate all the persons displaced from the insanitary dwellings, that sanitary laws will be more and more practically enforced, and that all this will be done without loss to the ratepayers. In his evidence Dr. Hope stated that the number of persons displaced since 1884 by these proceedings was 10,220, from 2920 houses. The total number of empty houses within a mile from demolished premises is 5442 under 6*s.* 6*d.* per week rental. Of these, 2992 were front houses with through ventilation. With reference to the 578 insanitary houses which it was proposed to remove, Dr. Hope stated that they were of the worst type with a few exceptions, even these being badly ventilated. Most were in a state of ruinous dilapidation, the watercloset arrangements being defective and demoralising and the death-rate abnormally high—71 per 1000 in one of the streets during each of the last five years. In answer to the question as to what became of the displaced inhabitants, Dr. Hope expressed his conviction that they went to better houses, finding that the older and worse ones were swept away and were no longer to be obtained. At the meeting of the Insanitary Property Committee on the 20th inst. a letter was read from the Local Government Board sanctioning the borrowing of £25,000 for the purchase and demolition of insanitary property. This is the result of the above inquiry.

July 24th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Action against the Tynemouth Corporation.

AT the Summer Assizes an action was brought by the widow of a North Shields merchant in which she sued the corporation of Tynemouth (under Lord Campbell's Act) for compensation for the loss of her husband, Mr. Waugh, whose death, she alleged, was brought about by the negligence of defendants. They were alleged to have performed some drainage work in connexion with Mr. Waugh's house, and thus to have caused an escape of sewage and gas into the house which accelerated his death. The defendants denied liability, and also claimed exemption under the statute of limitations. It was proved that there were two drains running from Mr. Waugh's house to the sewer, one an upper drain leading from the watercloset, and the other on a lower level running from the basement. In June, 1892, something was found to be wrong with the sewer, and the corporation decided to put it right. They disconnected the upper drain only, the lower drain being left as it was, causing the house to be a veritable death-trap. Things went on like this until February, 1893, when an accumulation of sewage was found in the basement, and had to be pumped out. This led Mr. Roberts, the sanitary engineer, to be called in, and the defect was discovered. The stench was such that Mr. Waugh became ill, the house was condemned by his medical attendant, and Mr. Waugh

brought an action in June, 1893, for personal injuries, which was pending in August, 1893, when he died. For the defence, it was admitted that there was a breach of duty in making a new sewer without connecting with it one of the drains from the house of the deceased, and they were responsible for the collection of sewage matter in the basement. His lordship summed up in favour of the plaintiff, and the jury, after retiring, returned a verdict for Mrs. Waugh, the widow, with £900 damages.

The Bowes Museum at Barnard Castle.

It is stated that the action brought by the trustees of the museum against the estate of the deceased Mr. Bowes has been compromised for £5000. The agreement has been approved by the Charity Commissioners, and the money will be paid over to the trustees of the museum in about two months.

Small-pox in the Middlesbrough Sanatorium.

The medical officer of the Middlesbrough Sanatorium, Dr. Malcomson, reported that nine patients (eight from Middlesbrough and one from Stockton) had been admitted into the hospital during the past month, making the total number twenty-four. Of these, eight had been discharged cured, leaving sixteen under treatment. There were five cases of small-pox, all of which had come from Leith.

Whitby.

The 108th annual meeting of the Whitby Public Dispensary has been held, and from the report it appears that a total of 533 patients had been treated during the past year. The Whitby Museum is well worth a visit. The collection of ammonite and saurian fossils is extensive, and in some respects unique. During the quarter ending last week there has been no death from any infectious disease registered in the Whitby district; so there is a good prospect for a full summer season.

Newcastle-on-Tyne, July 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENT.)

Workmen's Dwellings in Glasgow: a Social and Sanitary Experiment.

SANITARIANS and other reformers will learn with satisfaction that the Glasgow Workmen's Dwellings Company (Limited) have succeeded beyond expectation in their task of solving the problem of the housing of the working classes, and that the scheme is successful not only socially but also commercially. The company's first experiment was made in the erection of two tenements of small dwelling-houses in the northern district of the city; then four old tenements in the east end were renovated. The last and most trying, but most gratifying, experiment has just been made in the alteration and improvement of four tenements of small dwelling-houses in a southern district, which has for a generation been notorious in the annals of our sanitary department. When acquired the houses were in a most dilapidated condition, and inhabited by tenants perhaps the most degraded and criminal in the city. Most of the houses were of one apartment and of the "ticketed" variety—that is, their cubic space had been measured and indicated by a ticket on the door, in order to bring the houses under the midnight visitation by the sanitary inspectors. The policy of the company was reasonable—namely, to provide simple, sound, and cheap houses designed to earn a reasonable return on the capital invested—in the belief that it is only on ordinary commercial lines that permanent success can be obtained or that the work can be extended. The company's first step was to get the name of the district changed. Then the old tenants had to be cleared out. The houses, which were found practically destitute of everything that goes to make a home, were speedily transformed; water has been introduced into each house; grates with ovens, bed frames, cupboards, shelving, and gas fittings—the latter usually accompanied by a "penny-in-the-slot" meter—so that tenants may buy their gas in pennyworths. A common washing-house has been built for the tenants, the sanitary accommodation has been improved, while the stairs, landings, and passages have been well lighted and ventilated. These houses now occupy rather a peculiar position in the social scale; while they are such that decent working people need not hesitate to live in them, yet, of course, they are not perfect; but they provide a stepping-stone to those who wish to improve their position, giving the poorest an opportunity of shaking themseves free of low surroundings and degrading companions. Strange to say, all this has been found possible almost without raising the scale of rental on the property. The average rent for one-roomed houses is 2*s.* per week, for two rooms 2*s.* 9*d.* and 3*s.* per week—charges which include water-supply and stair-gas. The result of all this effort and arrangement has been most satisfactory, there having been quite a run upon these houses by a respectable class of struggling working people; in fact, it has been necessary, in order that the venture should fulfil its purpose socially, to take measures to exclude tenants who could well afford to pay a higher rent, this being accomplished partly by making the houses severely simple in style and fittings, and also by making inquiry into the earnings of proposing tenants. The company hold themselves responsible for overcrowding.

July 25th.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Fetherstonhaugh Convalescent Home.

THE Fetherstonhaugh Convalescent Home, Rathfarnham, which has been established in connexion with the Adelaide Hospital, Dublin, was formally opened last week by his Grace the Archbishop of Dublin. In the course of the Archbishop's address he said that it had been a source of considerable regret to the management of the Adelaide Hospital that when a patient had been in the hospital for a certain time, and had been so far restored to health as to make it impossible for the hospital to keep that patient any longer within its wards, the patient had to go forth and return to his or her daily work, and that, too, at a time when there had not been sufficient progress made towards recovery to make it safe for the incurring of such a risk. Mrs. Fetherstonhaugh solved the difficulty by bequeathing a sum of £6000 for the founding of a convalescent home to which patients on leaving the hospital might go at that critical juncture in their lives. A site for building purposes was found at Rathfarnham, a healthy locality a few miles from the city, and the convalescent home was erected. It will require an additional £500 to suitably furnish the home and place the grounds about the institution into proper condition. The keeping up of the home will require a sum of £1000 yearly from the Adelaide Hospital, but there will be no difficulty in obtaining this amount.

Death of Five Children from Erysipelas after Vaccination.

Last week Dr. Clibborn, on behalf of the Local Government Board, held a sworn inquiry at Aghadowey Dispensary, Coleraine, regarding the deaths of five children from erysipelas following vaccination between May 17th and July 28th of last year, and also for irregularity in allowing the midwifery nurse of the dispensary to vaccinate. Dr. H. S. Morrison, medical officer of the dispensary, who had recently resigned his office, and then withdrew it at the request of the committee, was in attendance. Mrs. Harkin deposed that her child was vaccinated in April, 1893, by Dr. Morrison, that in a fortnight symptoms of erysipelas appeared, and the child died on May 17th. The lymph had been taken from her sister-in-law's child. Three other women gave somewhat similar evidence, and Mrs. McQuigan stated that the nurse vaccinated her baby on May 2nd, 1893, and that it died from erysipelas on June 3rd following. Nurse Walker said she was a qualified nurse and had acted as midwife since 1883. She had vaccinated children ever since, Dr. Morrison having supplied the lymph, which she used with an ordinary needle, first dipping it in carbolic solution before using. The previous medical dispensary officer had taught her to vaccinate. She acknowledged that there had been puerperal fever in the district in March or April, 1893, but she had nothing to do with the cases. Dr. Morrison was of opinion that the deaths were due to erysipelas, but he could not explain how the first child (Mrs. Harkin's sister-in-law's child) came to be attacked with the disease. The other cases were vaccinated before the erysipelas had appeared; but it was from one of the children who subsequently developed erysipelas that the lymph had been taken which was supplied to the nurse. He thought that perhaps the mother, Mrs. McQuigan, having

taken her child into a house in which there was measles after the vaccination had been performed might have led to the disease. After the second outbreak of erysipelas he destroyed his instruments and points, and called in three medical men to see what could be done. He vaccinated the child McQuigan with lymph obtained from the Local Government Board, but discontinued it and got a fresh supply from a medical practitioner, with which he vaccinated successfully three children. Then he vaccinated three other children, two of whom died from erysipelas, and vaccination was then stopped. After some time he got some fresh lymph from the Local Government Board, but this proving unsuccessful, although no disease occurred, he obtained a supply of microscopically examined lymph which he had been using since with good results. The evidence has been forwarded to the Local Government Board accompanied by a report from Dr. Clibborn.

Mr. J. C. Benson, A.M., has been elected Librarian to the Royal College of Physicians of Ireland.

July 24th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

An Epidemic of Suicide.

IT has long been a matter of common observation that the onset of hot weather is synchronous with an increase of cases of mental aberration which often end in suicide. This year has been no exception to the rule, for there were reported last week in Paris seventeen suicides, the corresponding figure for the preceding week having been thirty-one. The mean temperatures for these periods were 25·4° C. (77·93° F.) and 27·4° C. (81·32° F.) respectively. Some relation appears also to exist between lunar development and suicides, for the week in which the thirty-one suicides occurred extended from June 23rd to June 30th, and the last quarter of the moon was on June 26th. The largest proportion of suicides took place between 6 A.M. and noon. Self-destruction is of more frequent occurrence in valleys than in elevated regions. Be it noted also that certain races are more prone to suicide than others, the Teutons taking the first rank and the canny Scots the last.

The Significance of Trophic Changes in the Nails.

Many years ago my old and respected master, Dr. Wilks, called attention to the clinical value of transverse furrows in the nails in relation to the existence of former attacks of illness. Dr. Patézon of Vittel publishes two cases in the *Bulletin Médical des Vosges* which fully confirm the views of Dr. Wilks. The first was that of a strong man aged sixty years who had for several years suffered from attacks of dermatitis exfolians. Almost all his finger nails present a series of transverse striæ separated by unequal intervals. Each nail has an average length of 15 millimetres; from the root to the first furrow the length is 4·87 mm., corresponding to a respite from his attacks extending from April 1st to July 3rd, 1891, this giving a growth of 1·624 mm. per mensem. The first and second furrows are separated by a space equal to 2·03 mm., corresponding to five weeks of respite; the second and third furrows are separated by a length of nail equal to 2·435 mm., corresponding to six weeks of respite; finally, between the third and fourth furrows is an interval of 2·435 mm., also corresponding to a healthy period of six weeks. In the second case the nails present only one furrow, representing a single pathological period of forty-four days. The moment of observation was separated from the commencement of convalescence by a period of 157 days. The distance separating the root of the nail from the upper border of the furrow is 9·5 mm. The furrow itself has a width of 2·5 mm., and its peripheral edge is separated from the free edge of the nail by a distance of 3 mm. In these two instances the rate of growth of the nail per month during a healthy interval was 1⅔ mm., the entire nail having been reproduced in eight and a half to nine months. It is hardly necessary to call attention to the possible medico-legal significance of these traces of former illness.

Recurrent Epistaxis after Bullet Wound of Temple.

The dagger wound that killed President Carnot has served to recall the therapeutic importance of plugging with a view to the arrest of hæmorrhage. A case reported by M. Schwartz at a meeting of the Académie de Médecine (July 17th) is very instructive in this respect. A man shot himself twice in the right temple. Above the outer extremity of the eyebrow there were seen the two orifices of entrance. Sight was entirely lost in the right eye, the outward rotatory movements of which were abolished. The pupil was motionless and dilated, and the sense of smell was lost, but there were no brain symptoms. The wound was closed, and the man was discharged in three weeks. A fortnight later serious epistaxis supervened, the source of which could not be discovered. One day, in the presence of M. Schwartz, abundant arterial epistaxis occurred, which could not be controlled by tamponing. Ligature of the left external carotid was had recourse to, but, the hæmorrhage persisting, the right external carotid artery was in its turn tied after a few days. The loss of blood continued, and the patient became so exhausted, despite injections of artificial serum, that further measures were decided upon. Incisions allowing of the complete exposure of the nasal fossæ were practised, which brought to view, far back in each nostril, a wide hole, which was, in each case, plugged antiseptically. The facial incisions were united, and healed by first intention, the epistaxis ceasing definitely. In this case M. Schwartz supposes that the right internal carotid artery was torn in the sphenoidal sinus, and that consecutive ulceration determined the repeated attacks of epistaxis.

The Lubrication of Catheters.

Professor Guyon is in the habit of using the following preparation in his wards at the Necker Hospital for the purpose of facilitating the exploration of the urethra and bladder: Powdered soap, 50 grammes; glycerine and water, of each 25 grammes; mercuric perchloride, 0·02 centigramme. This ointment is not irritating to the urethra and is endowed with much greater lubricating properties than oil or glycerine.

July 24th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Cholera in Germany.

CASES of cholera continue to appear in Eastern Germany, but almost entirely amongst people engaged upon the floats and barges. There are at present no appearances which would lead one to anticipate the occurrence of an epidemic outbreak. There is no doubt that the waters of the Vistula and its tributaries are infected with the cholera vibrio; but though a strict watch is kept and a supply of good water is provided it seems impossible to prevent the workmen and their families from drinking directly from the river. All the river traffic is strictly inspected by medical men appointed for the purpose, and every means taken to ensure the early detection and isolation of any cases that may occur, temporary military hospitals being provided on the banks with this object.

The Serum Treatment of Diphtheria.

The serum treatment of diphtheria attracts a good deal of attention, and the results of the forthcoming discussion in the *Medicinische Gesellschaft* are awaited with much interest. The report by Dr. Katz of cases treated by this means in the Kaiser and Kaiserin Friedrich Children's Hospital is distinctly favourable, and as the experiment is being carried out there under the supervision of so well-known and capable an observer as Professor Baginsky the results are worthy of every attention.

The Chair of Hygiene in Munich.

Professor Buchner's appointment to the chair of Hygiene in Munich in succession to Professor Pettenkofer will to a certain extent do away with the difference which has hitherto existed between the views taught in the school of Professor Koch in Berlin and those advocated by Professor Pettenkofer and his followers in Munich, since Professor Buchner is distinctly more in agreement with Professor Koch than his predecessor.

RUSSIA.

(FROM OUR OWN CORRESPONDENT.)

The Cholera in St. Petersburg and Cronstadt.

THE cholera epidemic in St. Petersburg, which made its reappearance on June 19th (July 1st), or more than one month earlier than in either 1892 or 1893, continues to spread. It is already much more severe than it was in

either of the two past summers. Between June 19th and 23rd 80 cases were recorded, with 20 deaths, and on the last date 60 cases remained in hospital. The further course of the disease has been as follows:

	Cases.	Deaths.	Remaining.
From noon on June 23rd to noon on June 24th	22	19	61
,, ,, 24th ,, ,, 25th	39	13	87
,, ,, 25th ,, ,, 26th	66	17	133
,, ,, 26th ,, ,, 27th	89	30	184
,, ,, 27th ,, ,, 28th	77	35	223
,, ,, 28th ,, ,, 29th	111	39	287
,, ,, 29th ,, ,, 30th	143	54	332
,, ,, 30th ,, July 1st	171	50	460
,, July 1st ,, ,, 2nd	218	69	576
,, ,, 2nd ,, ,, 3rd	158	69	635
,, ,, 3rd ,, ,, 4th	196	79	713
,, ,, 4th ,, ,, 5th	206	82	787
,, ,, 5th ,, ,, 6th	197	93	813
,, ,, 6th ,, ,, 7th	198	101	842

The total number of cases of cholera in eighteen days has been 1973 and of deaths 770. The hospital accommodation, though tried, is as yet adequate. Provision was made for 1000 cholera patients and it will be seen that this figure has not yet been reached. A barrack and a prison have already been converted into hospitals, and other buildings are available for the purpose if required.

In Cronstadt nearly 60 cholera patients are at present in hospital and there are daily admitted from 6 to 12 fresh cases. Most of these cases are drawn from among the labourers working in and about the harbour. So far the English shipping in Cronstadt and St. Petersburg has escaped, with the exception of a single steamer, the s.s. *Acme* of London. This steamer arrived off Cronstadt on June 22nd (July 4th). On June 27th (July 9th) the ship's carpenter was admitted to the British Seamen's Hospital in Cronstadt suffering from cholera. Between June 27th and 30th (July 9th and 12th) seven other members of the crew were admitted. Two of these were also suffering from cholera; comma bacilli were present in their dejecta and in those of the first case. One of these patients died on June 30th, ten hours after admission. The remaining five patients were suffering from diarrhœa; in only one of these were the dejecta suspicious in character, but no comma bacilli could be detected in them and the case was returned with the other four as ordinary diarrhœa. There are strong reasons for suspecting the water of the gulf as the source of infection in these cases. The *Acme* filled a half-empty tank with water taken from the gulf just opposite to Cronstadt. All the crew drank this water from June 23rd (July 5th) to June 27th (July 9th), after which boiled water was used. So far as can be ascertained no other ship has taken in water directly from the gulf in the present season. The matter is being investigated.

Leprosy in Siberia.

The Medical Department of the Ministry of the Interior has sent three medical men to the west and north-west of Siberia to examine into the degree of prevalence of leprosy among the Samoyeds and Ostiaks, particularly in the governments of Tobolsk, Tomsk, and Yenisei. Reports state that the disease is as widely spread among these tribes as among the Yakuts.

The Cultivation of Medicinal Plants in Russia.

The Ministry of Agriculture is about to make a series of experiments on a large scale upon the cultivation of medicinal plants, believing that there are immense possibilities in Russia for the growth of such plants.

The Twelfth International Medical Congress.

The rival claims of St. Petersburg and Moscow to be the scene of the next international congress have been decided in favour of Moscow, and it is officially announced that the University of Moscow has undertaken to make the necessary preparations. The date of the congress has not yet been announced.

St. Petersburg, July 8th (20th).

EGYPT.

(FROM OUR OWN CORRESPONDENT.)

Bilharzia Eggs and Embryos.

DR. LOOSS, the able assistant of Professor Leuckart of Leipzig, spent most of the winter months in Alexandria and Cairo, with the sole object of studying the development of Distomum hæmatobium, and it is to be supposed that the result of his labours will appear in Professor Leuckart's forthcoming volume. His early observations refer only to those eggs evacuated with the urine, which contain either a fully developed embryo, ready to escape, or whose contents are dead and untransparent. The conduct of the embryos in the egg during their stay in unchanged urine has been already described by Cobbold. If some freshly passed bilharzia urine is diluted with a fourth part of water the embryos display at once great activity, and hatching occurs in a few minutes if the liquid is kept at blood heat. In cold urine, on the contrary, the embryos begin to die in a few hours, so that none are still living after the first day. It is apparently the water which enlivens the embryos, causing a gradual increasing swelling of the egg which leads at last to the bursting of the shell and the release of its contents. It is thought that Dr. Looss' researches will throw some light upon the internal organisation of the embryos. He believes that the two large round or oval nucleated cells described by various writers have no connexion with the stomach but are gland cells similar to those met with all through the body of the full-grown worm. Just behind the closed end of the stomach and these gland cells he has seen a heap of small granular nuclei, which by its position may prove to be the nervous system of the embryo. The entire inside of the hinder half of a fresh embryo is filled with a quantity of tightly packed pale globules, which on careful examination prove to contain nuclei and nucleoli, and are perhaps germinal cells. It is greatly to be desired that the Egyptian Government should find the money to found a chair for the special study of the parasites of man and beast with which this country is so richly endowed. In the meantime we must await the results of Dr. Looss' experiments on monkeys.

Plasmodic Corpuscles in Malaria.

Dr. Kaufmann has recently communicated to the members of the *Institut Egyptien* the result of his efforts to discover in Egypt the malarial hæmatozoa first brought to light by Laveran and since studied conscientiously by several Italian observers. His early efforts were fruitless, and it was not until July, 1892, that the microscope revealed for the first time in Egypt plasmodic corpuscles which do not differ from those described by other observers. The patients were living in Ismailia, on the Suez Canal; but afterwards, in the autumn months, cases were found among the workmen of Cairo, who sleep on the ground near the Nile and near ponds of infiltration water. The prevalence of malaria at Ismailia dates from about fifteen years back and is chiefly tertian, and is said to be caused by infiltration of the subsoil by the sweet-water canal and also by the mixture of sweet and salt waters in the Canal itself. It exists to a slight extent all through the year, rises suddenly during August and September, attains its maximum in October and November, and declines rapidly in December. Dr. Kaufmann believes with Golgi that many of the so-called quotidian fevers are really double tertian or triple quartan, and he gives notes of one of his cases the type of which was changed from quotidian to tertian by the administration of thirty grains of methylene blue during five days. A few experiments have been made with methylene blue in the treatment of quotidian ague, but it does not appear to be so useful in this country as quinine. In fact, quinine acts so certainly in acute cases of intermittent fever as met with in Cairo that one does not desire another specific. It must, however, be given in doses of ten grains three times a day, and care must be taken that the dose be given a few hours before the temperature begins to rise.

Anchylostomiasis.

The Kasr-el-Aini statistics for 1893 continue to show the great prevalence of the anchylostomum worm among the peasant class and also its comparative rarity among women patients. In one of the medical sections of the hospital out of 588 men no less than 172 were found to be suffering from the anæmia caused by this parasite, while in only 2 women out of a total of 249 was it discovered. The thymol treatment has now been extended to the Egyptian army hospitals, where also energetic means are being taken to try to stamp out syphilis, which is another prevalent disease in what is, on the whole, a very healthy body of men.

Cairo, July 10th.

AT a recent meeting of the governors and subscribers of the Jews' Hospital and Orphan Asylum, Alderman George Faudel Phillips was elected president in the place of the late Mr. Behrend.

Obituary.

JOHN CAPORN SMITH, M.R.C.S. ENG., L.S.A., J.P.

ON Sunday, July 15th, Mr. John Caporn Smith died at his residence, 24, King-street, Great Yarmouth. Mr. Smith was born at Northampton in the year 1812, so that at the time of his death he had attained the advanced age of eighty-two. He was educated at Merchant Taylors' School and St. Bartholomew's Hospital, taking the diploma of M.R.C.S. in 1834, and that of L.S.A. the subsequent year. He commenced practice in Great Yarmouth in 1836. He was early in his career appointed a surgeon to the Great Yarmouth Hospital. For many years he was surgeon to the old East Norfolk Militia, and for the last thirty-nine years was surgeon to the Great Yarmouth Workhouse, retiring from that position on account of failing health in March last, when he was unanimously voted by the guardians a superannuation annuity of two-thirds of his salary. Independently of his appointments he had for many years an extensive private practice. He was a very old member of the British Medical Association, and some years since was president of the East Anglian branch of that society. He took an earnest and prominent interest in municipal duties, and was an alderman and senior magistrate for the borough. He was also a prominent Freemason, having three times been Master of his lodge, and on two occasions been Provincial Grand Senior Warden of the Provincial Grand Lodge of Norfolk.

He was attended during his last illness by his friend of many years, Mr. W. E. Wyllys. Mr. Smith leaves a widow, three daughters, and one son, who is a member of the medical profession. His death has been the subject of general and deep regret in the borough, where his life had been passed, and where he had shown himself a valuable public servant and a kind and courteous friend to his fellow citizens.

TOM BAIRSTOW, L.R.C.P. & S. EDIN.

MR. TOM BAIRSTOW, whose death occurred at his residence, 50, George-square, Edinburgh, on July 2nd, was born at Halifax in 1860. He was left an orphan at an early age and commenced his professional studies at Edinburgh, at which school he took the above qualifications in 1883. After a short period of work in a country practice he was invited to undertake the duty of superintendent of the department of midwifery and gynæcology in the Marshall-street Dispensary, an appointment which he retained nearly two years. In this office, by his untiring and ceaseless devotion to work, he laid the foundation of his successful after-career as a general practitioner. He was an able and conscientious physician and an expert obstetrician, kind and considerate to his patients, who in turn greatly esteemed and respected him, as could be seen from the throng of mourners that surrounded his grave. Mr. Bairstow took an active interest in the Edinburgh Branch of the British Medical Association and in the promotion and prosperity of the Edinburgh Yorkshire Association. At the time of his death he held the office of surgeon to the Edinburgh High Constables. He leaves a widow and two children, the youngest only two months old.

DEATHS OF FOREIGN MEDICAL MEN.—The deaths of the following members of the medical profession are announced:—Dr. Jean Anten, President of the Medical Commission of the Province of Liège; Dr. J. L. Moret, Professor of Physiology in the Rheims Medical School; Dr. A. Molina, Professor of Forensic Medicine in the Medical School of Guatemala; Dr. Gustav G. Fogel, who, while medical officer of the Tashkent Hospital, showed himself a skilful surgeon.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

THE MOXON MEDAL AND SIR W. JENNER.

AT the comitia of the Royal College of Physicians on Thursday last (the 26th inst.) the Moxon Medal was, on the recommendation of the Council, awarded to Sir William Jenner, Bart, G.C.B. This medal, which was founded as a memorial of the brilliant and gifted Dr. Walter Moxon of Guy's Hospital, is awarded triennially for distinguished services in clinical medicine. The award in 1891 was made to Sir Alfred Garrod, the public bestowal of the medal taking place after the delivery of the Harveian oration on St. Luke's Day. Of Sir William Jenner's preeminence as a clinical observer there is no question, and it must be a source of sincere gratification to him to find that the Royal College of Physicians, over which he ably presided, has delighted to honour him in this signal manner.

Medical News.

SOCIETY OF APOTHECARIES OF LONDON.—The following candidates have passed in the under-mentioned subjects:—

Surgery.—L. C. Dillon, King's College; J. G. Faber, St. Bartholomew's Hospital; A. H. Grace, Bristol; T. S. F. Hudson, Birmingham; R. J. Hughes, Durham; G. A. Jelly, Manchester; G. H. Lansdown, King's College; G. M. MacDonald, King's College; E. D. Madge, Middlesex Hospital; H. G. T. Major, Guy's Hospital; J. A. Morgan, Charing-cross Hospital; C. W. Williams, St. Bartholomew's Hospital.

Medicine, Forensic Medicine, and Midwifery.—J. J. Edwards, St. Mary's Hospital; H. B. Falconar, King's College; H. Harvey, London Hospital; S. H. Long, University College; G. J. R. Lowe, St. Bartholomew's Hospital; G. W. B. Marsh, Durham; W. R. Meyer, King's College; W. P. Thomas, London Hospital.

Medicine and Forensic Medicine.—J. Friend, Leeds.

Medicine.—H. Litherland, Manchester; H. Richardson, Manchester; P. L. G. Skipworth, St. Bartholomew's Hospital.

Forensic Medicine and Midwifery.—H. G. Nichols, Birmingham; E. R. Sims, Glasgow.

Forensic Medicine.—D. D. Brown, St. Bartholomew's Hospital; R. J. Hughes, Durham; E. C. B. Ibotson, Guy's Hospital; E. D. Madge, Middlesex Hospital; T. Watts, Manchester.

Midwifery.—M. T. Archdall, Charing-cross Hospital; J. W. F. Graham, St. Bartholomew's Hospital; J. P. Stokes, Sheffield.

To Messrs. Brown, Edwards, Faber, Falconar, Harvey, Hughes, Jelly, Litherland, Long, Lowe, Madge, Marsh, Meyer, Richardson, Skipworth, Stokes, Thomas, and Williams was granted the diploma of the society.

THE INSTITUTE OF CHEMISTRY OF GREAT BRITAIN AND IRELAND.—At the examination in Practical Chemistry for admission to the membership of this institute, held at the laboratories at 30, Bloomsbury-square, from July 2nd to 5th, twenty-seven candidates presented themselves, of whom the following seventeen were successful:—

A. Adams, Mason College, Birmingham; H. Bowes, assistant to W. Thompson, F.I.C.; B. S. Bull, Christchurch University, New Zealand; O. F. C. Block, Finsbury Technical College; W. C. Carter, Finsbury Technical College; W. Crossley, Royal College of Science, Dublin; W. R. Hardwick and J. Harger, University College, Liverpool; J. A. Hatfield, Mason College, Birmingham; W. R. Innes, University College, Liverpool; G. H. Perry, Royal College of Science, London; W. Ralston, Glasgow and West of Scotland Technical College; A. Ross and H. C. Seabrooke, Finsbury Technical College; T. C. Sharrott, Mason College, Birmingham, and Royal College of Science, London; E. A. Warmington, Mason College, Birmingham, and Leipsic University; and J. T. Whitton, Glasgow and West of Scotland Technical College.

The examiners were Professor Wyndham R. Dunstan, M.A., F.R.S., F.I.C., and Mr. Thomas Fairley, F.R.S. Edin., F.I.C. The members of the institute now number over 850, and there are over 200 registered students.

UNIVERSITY OF GLASGOW.—The following candidates have passed the final professional examination for the degrees of Bachelor of Medicine (M.B.) and Master in Surgery (C.M.):—

A. Candidates who took Pathology in Final Professional Examination.—David Beatson, Peter Stedman Buchanan, Archibald Campbell, Allan Aiken Clark, Robert Kirkwood Currie, Donald Stewart Dewar, Archibald Smith Dick, Robinson Simpson Dickson, George Alexander Eadie, Wm. Cameron Faulds, Daniel Ferguson, James Forrester, Robert Forsyth, John James Fraser, John Francis Robert Gairdner, Alfred Alexander Cumming Grant, Arthur Lawton, John Morrison, John Munro, William Edgar Macharg, Alexander Macphail, Alfred George Newell, Daniel Evans Powell, Daniel Richmond, James Currie Robertson, M.A., B.Sc., Joseph Scott, Robert Nicol White, and Alexander Grieve Young.

B. Candidates who passed Pathology in Third Professional Examination.—David Blair, M.A., Thomas Douglas Brown, John Brownlee, M.A., Edward Napier Burnett, Alexander Cameron, Henry Carmichael, William Stewart Cook, B.Sc., Hugh Brown Currie, John Drummond, John Templeton Dunlop, John Wainman Findlay, Thomas John Lawson Forbes, Robert Wardrop Forrest, James Fairlie Gemmill, M.A., Alexander Girvan, David Glen, John Guy, Clarence Barrymore Harrison, Adam Kay, David Ligat, James Mair, John Masterton, John Colin Matheson, Robert Morton, John Murray, Fergus M'Kenna, Donald Maclean, Archibald Neville M'Lellan, Alexander MacLennan, James Campbell M'Neillie, Cuthbert Nairn, Hugh Stirling Brown Nisbet, James Pettigrew, John Reid, William Salmond, Alexander Shearer, Robert Tennent, James Dunlop, Octavus Wilson, and James Murray Young.

Women candidates.—Alice Lilian Louisa Cumming and Marion Gilchrist.

DR. NOGUÈS of Toulouse has been created a Chevalier of the French Legion of Honour.

THE honorary secretary of the British Medical Benevolent Fund has received a donation of £200 to the funds of the charity from Mr. John Terry of Bath.

ROYAL COLLEGES OF PHYSICIANS AND SURGEONS IN IRELAND: CONJOINT SCHEME.—The following have passed the Third Professional Examination:—C. Cavenagh, G. Corcoran, B. Coyle, G. G. Delap, F. Dudley, J. C. Edge, R. Glynn, R. M. Hamilton, C. E. Hodgson, E. F. L'Estrange, F. P. Lindé, M. R. L. Moore, J. A. McMunn, J. F. O'Malley, J. J. O'Reilly, J. W. Scully, T. N. Shee, E. W. Siberry, and A. H. O. Young.

A TEMPERANCE PRESENTATION.—Dr. Clarke of Leicester recently presided over a large meeting in order to make a presentation to Mrs. S. Theobald, who has just completed her fiftieth year of work in connexion with the reformation of unfortunate members of the inebriate class. The presentation took the form of an illuminated address, which bore the names of a large number of sympathisers who recognised the great good she had done during her long and anxious life. The meeting was very largely attended, and Dr. Clarke, in his address, said that he had been struck always with the genuine common sense which Mrs. Theobald had shown in the management of her establishment—Tower House. She had specially shown that the best way to remove the bad habit of drinking was to insist that it be left off abruptly at once and for all.

OPENING OF MEATH GARDENS.—On Friday, July 20th, H.R.H. the Duke of York declared the Victoria Park Cemetery, Bethnal Green, which is to be known in future, in compliment to the philanthropic Earl of that name, as Meath Gardens, open to the public. The ground had been used as a cemetery up to the year 1876, when it was closed as over-full. The Metropolitan Public Gardens Association then, with the permission of the owners, and at a cost of about £3000, laid out the plot as a garden, the London County Council defraying certain of the cost. The Duke of York, after opening the gardens, drove to the Home for Jewish Incurables in the Victoria Park-road, where he was received by the Chief Rabbi, Mr. H. H. Raphael, the president of the Home, and several members of the committee. He was conducted through the wards by Dr. Tunstall, the medical officer, and Sister Ansley, the matron.

DENTAL HOSPITAL OF LONDON.—A conversazione in connexion with this institution was held at the Royal Institute Galleries, Princes' Hall, on the 19th inst. During the evening Mr. Christopher Heath presented the prizes to the successful students of the past session, after which he briefly addressed them on the past and present aspects of dental surgery. He congratulated them upon the fact that the dental profession had become an entity and upon the active measures taken by the General Medical Council to uphold the dignity and honour of the profession. The prize and class winners were as follows:—Saunders Scholar and winner of the Ash prize: N. G. Bennett; certificate of honour, G. L. Bates. Dental Mechanics: W. S. Nowell, E. H. Mackley, and N. G. Bennett. Operative Dental Surgery: H. W. Norman, N. G. Bennett, H. E. Mackley, J. A. Gartrell, and S. J. Hankey. Metallurgy: N. G. Bennett, F. W. Jones, G. E. Frost, and J. H. Gartrell. Dental Anatomy: N. G. Bennett, W. S. Nowell, A. E. Betteridge, and H. W. Norman. Dental Surgery: N. G. Bennett. Students' Society Prize: A. B. Densham. A capital programme of music was provided, and the opportunity was embraced by the staff and lecturers to urge the claims of the proposed new hospital, which is to be built on an advantageous site in the vicinity of the present hospital in Leicester-square, for which purpose the Committee require £40,000.

Parliamentary Intelligence.

HOUSE OF COMMONS.

MONDAY, JULY 23RD.

Sanitation in Egypt.

IN reply to a question by Mr. Seaton-Karr, Sir E. Grey said that the Finance Department was not solely or even mainly responsible for the delay in executing the drainage scheme for Cairo, and it was useless to take steps for carrying out the scheme until certain other measures had received the assent of the Powers.

TUESDAY, JULY 24TH.

Hours of Railway Servants.

Mr. Bryce, in reply to Mr. W. Whitelaw, stated that the North British Railway Company had been ordered to submit a revised schedule of the hours of some of their drivers, but the return had not yet been received. The Board of Trade were not yet satisfied with the reductions already made in the case of some of the Caledonian drivers and stokers. The Highland Company had also reduced the number of working hours of their servants, but the schedule had not been finally approved.

THURSDAY, JULY 26TH.

The Increase of Lunacy.

In reply to a question by Mr. Kenny, Sir George Trevelyan said he had called for a special report from the Scotch Lunacy Board with regard to the increase of lunacy.

The Coal-dust Question.

Mr. Asquith, answering questions put by Mr. S. Woods and Mr. David Thomas as to the desirability of further experiments being carried out with coal-dust, said that Mr. Hall's experiments had shown that explosions might be initiated by coal-dust without the presence of firedamp. The Commission had expressed the decided opinion that no more experiments were required, and that the matter was ripe for legislation, and in that opinion he concurred.

IN COMMITTEE.

Petroleum Acts.

The Select Committee of the House of Commons appointed to inquire into and report upon the working of the Petroleum Acts resumed their sitting on Friday, July 20th, under the Presidency of Mr. Mundella.

Colonel Majendie, continuing his evidence, strongly advocated the regulation of the sale and manufacture of lamps by law.

Sir H. Roscoe said there was no other country on the Continent so lax with regard to the storage of mineral oils as England, where any quantity could be stored without licence. The flash-point of oils was next considered by Sir H. Roscoe, who stated that he had also received important communications recommending that the flash-point should be raised.

Mr. A. Spencer, who has conducted the administration of the Petroleum Acts for the London County Council during the past fifteen years, was of opinion that the public were not sufficiently safeguarded by the existing Acts. Broadly speaking, the Petroleum Acts did not regulate petroleum oil at all, but simply regulated a product of petroleum. The oil in daily use for purposes of illumination was entirely free from control. He then explained the County Council arrangements for storage in licensed premises, and did not attach much importance to the raising of the flash-point. He considered the use of unsafe lamps to form the most serious danger to the public, a point which he substantiated by quotation from returns of the Metropolitan Fire Brigade.

Food Products Adulteration.

The Select Committee of the House of Commons on the Adulteration of Food Products met again on Friday, July 20th, Sir Walter Foster presiding.

Professor Long, member of the Council and of the Margarine Committee of the Central Chamber of Agriculture, examined by the chairman, said he advocated the establishment of a Government body, which might be placed under the Board of Agriculture, to deal with dairy products. To such a body the public should be able to send samples for analysis at fixed fees. With regard to margarine, he was against the introduction of colouring matter, and he suggested that packets containing the article should be labelled "margarine" in black letters not less than one and a half inches long by an inch broad. In his opinion the administration of the Adulteration Acts by local authorities should be made compulsory, and he thought there should be imprisonment in cases of repeated conviction. In regard to butter the great difficulty in detecting adulteration arose from the skill and ingenuity exercised in the introduction of the adulterants. Butter, margarine, brine, and colouring matter were put together and mixed most thoroughly. Not long ago he went to an English warehouse in the City of London and asked to see the butter they sold. He was shown the article and assured that it was pure butter, but when he had a sample of it analysed it was found to contain 25 per cent. of margarine. These mixtures were largely used in hotels and restaurants. He made that statement upon his own experience. It was impossible in certain circumstances to say with certainty whether an article described as butter was or was not genuine. He knew of no rough-and-ready test which could be applied to butter. Margarine melted more rapidly in the mouth than genuine butter, and had the flavour of bullock fat about it, but that was about all one could proceed upon. As showing the difficulty of detection even by experts, he might say that three or four years ago, when the British Dairy Farmers' Association held their annual conference in Scotland, they were invited to a large butter and margarine factory in Wigtownshire, and shown some beautiful samples made up in the form of butter, and asked to taste them and express their opinion upon them. Witness had had some experience of the matter before and did not taste, but nearly all the others did, and without a single exception they praised the samples as being perfectly pure and high-class butter. Subsequently they were astonished to be told that they were three different samples of margarine—three different blends at different prices. It was, therefore, clear that even a party of experts might be easily misled when a sample was made up in a skilful manner. He had nothing to say against this factory, because he believed it was run on perfectly fair principles. In experience it was found possible to mix with a butter costing 112s. per cwt. margarine to the extent of 25 per cent. and to sell the mixture at 100s. per cwt. The introduction of margarine had, in his opinion, increased the taste for mild butters, and in consequence the price of margarine had gone up considerably. It would be much cheaper for consumers to buy butter and margarine separately and mix them themselves, and that, as matter of fact, was done in Denmark. Margarine was constantly offered at 6d. per lb. and sometimes at as low a price as 4½d. per lb. The great margarine centre was Holland. The exports of butter from that country had fallen from 307 million lb. in 1885 to 141 million lb. in 1892, while the

exports of margarine had risen from 72 million lb. to 1196 million lb. The fall in one case and the rise in the other had been continuous. He calculated that the exports of imitation butter or margarine from Holland to this country were equal to about 5 lb. per head of our population. In the United States the Federal Government required that each person selling margarine should take out a licence, and that had had a most important effect in preventing fraud. He strongly objected to the practice of mixing the butter and margarine at the back of a screen or other position where the customer could not see what was going on. He contended that if they made up an article of food, it should be done openly. Witness then dealt with the milk question. He laid down as a standard for milk 3·2 per cent. of fatty solids and a total of all solids of 12 per cent. In support of this standard he submitted analyses supplied by a number of large firms in different parts of the country.—Would there not be any hardship upon sellers of milk which might be pure, but which came from a pure cow and might not reach your standard?—I think not, and for this reason. The milk sent in is not taken from one cow but from several. I think it is conceivable that one cow in three might give such a poor milk as would not come up to this standard, but I cannot conceive that three cows could be so poor as not to give a milk up to the standard.—You think the case would be met by tracing the milk to the individual cow?—Yes, I think it would.—And making that a valid plea against conviction?—Yes, only in specific cases. I do not think it would be fair to allow any retailer of milk who is buying milk from a number of cows to get off on that plea.

By Sir Mark Stewart: It might make the farmer careful not to have these poor cows?—Yes, certainly, and I am sure the farmer would be free from the possibility of conviction.

By the Chairman: He was ready to admit that a cow might be in a perfectly normal state of health and yet give milk which did not come up to the standard he had prescribed. Indeed, it was not at all rare to find a cow giving milk with less than 12 per cent. of solids. In Paris they adopted as a basis for prosecution 13 per cent. of solids and 4 per cent. of fat, and there they used the same processes of analysis as we do. There was no law on the point in Paris, the matter being practically left to the chemists themselves. In Canada there was no standard, but a year or two ago they adopted a method in order to ascertain what figures should be fixed in the event of a standard being determined upon, and the large return of samples they took averaged 12·48 per cent. of total solids. In Boston they had the high standard of 13 per cent., and the result had been most beneficial. With regard to children's milk it was pretty generally known that many of the small vendors had no means of providing it, and simply bottled a portion of the milk they ordinarily received and labelled it as specially intended for children. He thought it time this sort of thing was stopped by the law. There was also much deception in regard to condensed milk. In every case it was separated milk, and he found that many of the samples contained very much less fat than they ought to. He was well aware that in the case of English and Swiss brands the quality was very high indeed. He would have the public properly warned as to what they were buying and the place of origin. Witness showed the committee the label of an Irish brand bearing a representation of a Swiss chalet with the Alps in the background, and said that anyone buying milk thus labelled would imagine it to be Swiss, and therefore milk of high quality. He also thought the labels should not contain directions for use; they should not, for instance, recommend the milk as being valuable for infants and invalids, thus misleading the poor people who were the chief buyers of this article.

The Committee met again on Wednesday, July 25th, Sir Walter Foster presiding.

Mr. Middleton, a dairy farmer in Yorkshire, examined by the Chairman, said he was in favour of a stricter inspection of butter and butter mixtures. He would have all the factories and wholesale stores regularly inspected, as well as restaurants, and, if possible, hotels. The Associated Chambers of Agriculture allowed 6 per cent. of margarine to be mixed with butter, but he would not allow even that if it could be detected. He would have all shops where milk was sold inspected by the local authority, and all sellers or carriers or hawkers of milk registered. In his opinion the greatest amount of milk adulteration was done by irresponsible dealers who only sold a few gallons per day and carried on some other business. He thought it very desirable to have a standard for milk, and that everyone should know what it was. He found great difference between the quality of the morning and the afternoon milk, the latter being much the richer. In London the samples taken for analysis were nearly always taken from the afternoon or evening milk, and to that fact he attributed the high average brought out and the disposition in London to fix a high standard of quality. He had worked out some experiments with the milk of his own cows. He had tested the milk morning and evening on March 28th last of forty Shorthorn cows. The average of the morning milk was 2·86 per cent. of fat, and of the afternoon 3·68 per cent. These cows were highly fed and in very good condition, and were kept in a house together. The total average solids amounted to 11·96 per cent. On the 10th and 11th of the present month he had further samples taken from the same cows, which were then living on grass alone. On the former date the morning's milk showed 3·25 per cent. of fat, and the afternoon 4·57 per cent.; and on the latter date 3·09 per cent. and 4·70 per cent. respectively. He knew of no change of weather to account for the difference. On the 10th the total solids amounted to 12·52. In every case of prosecution where the magistrate entertained a reasonable doubt there should be an appeal to the cow, and if on that appeal it were found that the milk of the cow fell below the standard fixed then he certainly would not have a conviction. With such an appeal they could fix a much higher standard than they could without one. He had also tested the milk of eleven Guernsey cows fed with the same mixtures of food as the Shorthorns. The milk was taken on March 28th, and the morning milk gave 4·57 per cent. of fat and the evening 5·30 per cent., the average total solids amounting to 14·51 per cent.

By Mr. Jeffreys: The standard he was prepared to recommend along with the appeal to the cow was 3 per cent. of fat and 8·50 per cent. of solids not fat. Without the appeal he would reduce the standard to 11·25 per cent. of total solids.

By Mr. Channing: He admitted that milk was adulterated in transit. At present the railway companies insisted upon the churns being unfastened, but he had been endeavouring to devise a churn which could be fastened and at the same time show the amount of milk they contained. He would put down, if he could, the introduction of colouring matter to improve the appearance of poor milk. In London there was a greater demand than anywhere else for highly-coloured milk. In the North of England people were content to take the article in its natural colour.

By Sir Mark Stewart: He certainly thought there should be a uniform system of analysis.

Dr. Bannister, of the Somerset House Laboratory, presented himself for further examination. In reply to Mr. Whiteley, he said that dyed sugar was an article not unknown, although he had heard of very little of it. He did not consider colouring matter to be an adulteration until it reached a certain point. As to cocoa there could be no doubt that the natural proportion of the constituents was frequently altered by the extraction of fat, but in several respects it was greatly improved by the process. In his opinion margarine as an article of food was quite as nutritious as butter. As to beer, the idea that it was adulterated with all sorts of noxious things was altogether erroneous. During twenty years at Somerset House they had not come across a single case of noxious adulteration of beer.

By Mr. Kilbride: Neither the Society of Analysts nor Somerset House had fixed any standard for water in butter, but his own idea was that 16 or 17 per cent. of water should be about the margin allowed. He had seen the results of 2091 samples of butter tested at Copenhagen, and he found that 15 per cent of them contained from 16 to 20 per cent. of water. While that was so, he was well aware that the Danish Government had done a great deal to encourage the making of good butter in Denmark. He was also aware that the Government of this country had done nothing at all in this connexion in Ireland. He saw no reason why there should be more than 3 or 4 per cent. more water in butter intended to keep six months than in butter intended to keep a week. It was not the water but the salt that was the preservative, although the latter would always take up a certain amount of water in the process of mixing.

By Mr. Frye: He was in favour of coffee and chicory being sold as a mixture so long as it was properly described.

By Sir Mark Stewart: He did not regard pure margarine as in the slightest degree injurious to health; on the contrary, it was a perfectly wholesome commodity so long as it was made from sound material. He did not think the colouring matter was deleterious. As to the testing of milk, he thought that if the farmer took the density of his milk and the quantity of cream it would assist him materially in seeing how he was getting on with his milk produce. As to the general question, he would say that if the present Food and Drugs Acts were taken up and local authorities were compelled to have their analysts and inspectors and to carry out the Acts rigidly, there would be very little difficulty in getting pure food for the consumer.

By Mr. Colman: He did not see any necessity for separating food from drugs in future legislation, not the slightest difficulty being found in working the two together.

The Committee thereupon adjourned.

BOOKS, ETC., RECEIVED.

KIMPTON, HENRY, High Holborn, London, W.C.

Saunders' Pocket Medical Formulary, with an Appendix. By William M. Powell, M.D. Second Edition. 1894.

A Text-book of the Diseases of Women. By Henry J. Garrigues, A.M., M.D. Illustrated. 1894. pp. 690.

LEWIS, H. K., Gower-street, London, W.C.

Refraction of the Eye. Its Diagnosis and the Correction of its Errors. By A. S. Morton, M.B., F.R.C.S. Eng. Fifth Edition. 1894. pp. 72. Price 3*s.* 6*d.*

LONGMANS, GREEN, & Co., London.

Select Methods in Chemical Analysis (chiefly Inorganic). By William Crookes, F.R.S., P.P.C.S. Third Edition. Illustrated. 1894. pp. 718. Price 21*s.* net.

RICHARDSON, J., & Co., Leicester.

Our State Hospitals: their Construction, Management, and Organisation. By T. M. Dolan, M.D., F.R.C.S. Edin. pp. 66. Price 2*s.* 6*d.*

THE ROXBURGHE PRESS, Victoria-street, Westminster, S.W.

The Law and Lawyers of Pickwick. A Lecture. By Frank Lockwood, Q.C., M.P. pp. 108. Prices 1*s.* 6*d.* and 1*s.* net.

Revue des Sciences Médicales en France et à l'Étranger, 15 Juillet, 1894 (G. Masson, Paris).—Gynécomastie-Mastite Chronique et Adénite Axillaire Polyganglionnaire; par M. Hassler (Libraire de la Médecine, de la Chirurgie, et de la Pharmacie Militaires; Paris, 1894).—Die Giftthiere und ihre Wirkung auf den Menschen; von Dr. Otto v. Linstow (August Hirschwald, Berlin, 1894).—Brain: a Journal of Neurology; part lxvi., Summer, 1894 (Macmillan & Co., London); price 3*s.* 6*d.*—The Journal of Comparative Pathology and Therapeutics, June, 1894 (W. & A. K. Johnston, Edinburgh and London); price 2*s.* 6*d.*—The Quarterly Medical Journal for Yorkshire and adjoining Counties, July, 1894 (Pawson & Brailsford, Sheffield).—Sonderabdruck aus den Jahrbüchern der Hamburger Staatskrankenanstalten; Band iii., Jahrgang 1891-92. Klinische und Anatomische Untersuchung eines Falles von generalisierter tuberöser Lepra, mit besonderer Berücksichtigung des Nervensystemes; von Dr. M. Nonne (L. Voss, Hamburg und Leipzig, 1894).—Nuovo Metodo di Cura della Tubercolosi Polmonare; per il Dr. Carasso G. Michele (Roma, 1894).—Étude Clinique des Rapports de la Syphilis et du Tabes; par Socrate Lagoudaky, M.D., Paris (Henri Jouve, Paris, 1894).—On a Self-inflicted Bullet-wound of the Head; Extensive Injury to Skull and Brain; Recovery; by Allen T. Sloan, M.D., reprint (Oliver and Boyd, Edinburgh, 1894).—Three Cases of Small-pox; by Dr. A. T. Sloan; reprint (Oliver and Boyd, Edinburgh, 1894).—Manhattan Eye and Ear Hospital Reports, No. 1; January, 1894 (The Meriden Gravure Co., New York, U.S.A.).—The Royal Natural History, vol. ii., part ix.; edited by Richard Lydekker, B.A., F.R.S. (F. Warne and Co., Bedford-street, London); price 1*s.* net.—The New Guide to Bristol and Clifton and the Bristol Channel Circuit; edited by Jas. Baker, F.R.G.S.; illustrated (J. Baker & Son, Paternoster-square, London, and Clifton).—Sul Trionale (Dietilsulfonmetilmetano); del Dott. Federico Venanzio (L. Vallardi, Milano).—Sonderabdruck aus den Jahrbüchern

der Hamburger Staatskrankenanstalten, Band iii., Jahrgang 1891-92; Untersuchungen über eine Conjunctivitis-Epidemie; von Dr. H. Wilbrand, Dr. A. Saenger, und Dr. A. Staelin (Leopold Voss, Hamburg und Leipzig, 1894).—Grundzüge der Arzneimittellehre; ein klinisches Lehrbuch, von Dr. C. Binz; zwölfte Auflage (August Hirschwald, Berlin, 1894).—De l'Agrandissement Momentané du Bassin; rapport lu au Congrès International des Sciences Médicales tenu à Rome du 29 Mars au 5 Avril, 1894, par A. Pinard (G. Steinheil, Paris, 1894).—The Quarterly Journal of Microscopical Science, July 1894; illustrated (J. & A. Churchill, London); price 10s.—Magazine: The English Illustrated Magazine, August, 1894.—Journal of the Sanitary Institute, July, 1894 (E. Stanford, Cockspur-street, London, S.W.); price 2s. 6d.—The Westminster Review, August, 1894 (Fred. Warne & Co., Bedford-street, London); price 2s. 6d.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BREMNER, D. C., M.B., C.M. Edin., has been appointed Assistant Medical Officer to the East Riding Lunatic Asylum, Beverley.

BURNS, THOS., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Superintendent to the Porirua Asylum, near Wellington, New Zealand.

CHEVES, JAS. T., M.R.C.S., has been appointed a District Medical Officer for the St. Germans Union, Cornwall.

CRAIGER, HERBERT, M.B. Lond., F.R.C.S. Eng., has been appointed District Surgeon for the district of Jacobsdal, Orange Free State, South Africa.

CUNNINGHAME, JOHN, M.B., Ch.M. Edin., has been appointed a Public Vaccinator for the district of Port Chalmers, New Zealand.

CUTHBERT, JOHN, L.R.C.P. Edin., L.R.C.S. Irel., L.K.Q.C.P., has been appointed Public Vaccinator for Kadina, South Australia.

DOVE, R. A., M.B., C.M. Edin., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Brigg West Sanitary District of the Glanford Brigg Union.

DOWLING, NORMAN, L.R.C.P. Lond., M.R.C.S., has been appointed a Certifying Surgeon at Portland, Victoria, Australia, under the Factories and Shops Act, 1890.

DUNCAN, JAS., M.B., Ch.M. Aberd., has been appointed a Public Vaccinator for Coongulmerang, Victoria, Australia.

FENWICK, S. C. C., L.S.A., has been appointed Junior Assistant Medical Officer for the Workhouse and Infirmary of the Fulham Union, vice Shepherd.

FERGUSON, ROBERT, M.D. Glasg., Ch.M., has been appointed Medical Officer for the Newcastle United Friendly Societies' Dispensary, New South Wales, vice Kane, resigned.

FOOKS, E. E., M.B. Univ. New Zealand, has been appointed Medical Superintendent to the Seacliff Asylum, near Dunedin, New Zealand.

FOOKS, WALTER P., M.B., B.C. Camb., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Workhouse, Paddington, vice Snell, resigned.

FULLERTON, R., M.D., C.M. Edin., has been appointed Visiting Surgeon for the Greenock Eye Infirmary.

GILL, JOHN, M.B., C.M. Edin., L.R.C.P., L.R.C.S. Edin., has been appointed Parochial Medical Officer for Langholm, Dumfriesshire.

GROVE, WM. R., M.D. St. And., M.R.C.S., has been reappointed Medical Officer of Health for the St. Ives Urban Sanitary District.

HEARD, CHAS. DE W., L.R.C.P., L.R.C.S. Edin., has been appointed a Public Vaccinator for Werribee, Victoria, Australia.

KAYE, JAS. R., M.B., C.M. Glasg., D.P.H. Camb., has been appointed Certifying Surgeon under the Factories Acts, vice Greenwood, resigned.

KEAY, JOHN, M.D. Glasg., C.M., F.R.C.P. Edin., has been appointed Medical Superintendent to the Northern Counties Asylum, Inverness, vice Mackenzie, resigned.

KNAGGS, R. LAWFORD, M.A., M.D., M.C. Cantab., F.R.C.S., has been appointed an Honorary Assistant Surgeon to the General Infirmary, Leeds.

MORICE, CHAS. G. F., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Surgeon to the Grey River Hospital at Greymouth, New Zealand.

PARRY, LLOYD D., L.R.C.S. Edin., has been appointed a Government Medical Officer and Vaccinator for the District of Murrumburrah, New South Wales.

PROBYN, PERCY L., L.R.C.P. Lond., M.R.C.S., has been appointed Assistant Medical Officer for the Workhouse and Infirmary, Shoreditch.

REID, JAS. A., M.D., Ch.M. Aberd., has been appointed a Public Vaccinator for Sale, Victoria, Australia.

RICH, M. R., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Crowland Sanitary District of the Peterborough Union.

STEVEN, EDWARD M., M.B., Ch.M. Edin., has been appointed a Public Vaccinator in South Australia.

SUTTON, ERNEST R., M.B., Ch.B. Melb., has been appointed a Public Vaccinator for Myrtleford, Victoria, Australia.

THOMPSON, E. T., L.K.Q.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Sixth Sanitary District of the Bath Union.

WORTH, ERSKINE H., L.R.C.P. Lond., M.R.C.S., has been appointed Junior Assistant Medical Officer and Clinical Assistant at the Infirmary of the Wandsworth and Clapham Union.

YEARSLEY, P. MACLEOD, F.R.C.S., has been appointed Lecturer on Surgical Pathology to Westminster Hospital Medical School.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Ophthalmic Surgeon.

ADDENBROOKE'S HOSPITAL, Cambridge.—Resident House Physician. Salary £65 per annum, with board, lodging, and washing in the Hospital.

CAMBRIDGE UNIVERSITY.—The John Lucas Walker Studentship in Pathology. Applications to Professor Roy, New Museums, Cambridge.

CENTRAL LONDON OPHTHALMIC HOSPITAL, 238, Gray's-inn-road, W.C.—House Surgeon. Rooms, coals, and light provided.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, London, S.W.—Honorary Medical Staff. Physicians to in-patients. Physicians to out-patients. Pathologist.

DUNDEE ROYAL LUNATIC ASYLUM.—Assistant Medical Officer. Salary £100 per annum, with board, lodging, &c. Apply to Dr. Rorie, Royal Asylum, Dundee.

GENERAL HOSPITAL, Nottingham.—Senior Resident Medical Officer, for two years, but eligible for re-election for a similar term. Salary £120 for the first year, with an addition of £10 a year up to £150, with board, residence, and washing.

GENERAL INFIRMARY, Northampton.—Locum Tenens for assistant house surgeon's work for three weeks from August 3rd. One guinea per week and board and residence.

HALIFAX INFIRMARY AND DISPENSARY.—Assistant House Surgeon, unmarried. Salary £50 per annum, with residence, board, and washing.

RUBERY HILL ASYLUM, Bromsgrove, Worcester.—Clinical Assistant.

SAINT OLAVE'S UNION.—Dispenser of Medicines and Medical Officers' Clerk at the Infirmary, Lower-road, Rotherhithe, S.E. The officer will be non-resident, at a salary after the rate of £90 per annum, together with rations and an allowance of £3 0s. 10d. per annum in lieu of beer. Applications to the Clerk, Clerk's Offices, St. Olave's Union, 30, Tanner-street, S.E.

ST. LUKE'S HOSPITAL, London, E.C.—Clinical Assistant for six months. Board and residence provided.

SEAMEN'S HOSPITAL SOCIETY, "Dreadnought," Greenwich.—Junior House Surgeon for branch hospital, Royal Victoria and Albert Docks, E. Salary £50 per annum, with board and residence.

STOCKPORT INFIRMARY.—Junior House Surgeon, for six months, with board and residence. An honorarium of £10 will be given after six months' satisfactory service.

SUSSEX COUNTY HOSPITAL, Brighton.—Assistant House Surgeon, unmarried. Salary £30 per annum, with board, washing, and residence in the Hospital.

SWANSEA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, furnished apartments, coals, gas, laundress, and attendance.

WESTERN GENERAL DISPENSARY, Marylebone, N.W.—Junior House Surgeon, unmarried. Salary £50 a year, with board and lodging.

WEST RIDING ASYLUM, Wakefield.—Fourth Assistant Medical Officer. Salary £100 per annum, rising £10 annually to a maximum of £150, with furnished apartments, board, washing, and attendance.

Births, Marriages, and Deaths.

BIRTHS.

BAILEY.—On July 15th, at "Dunmore," East Dulwich-road, S.E., the wife of W. H. Bailey, M.B. Lond., M.R.C.S., D.P.H., of a son.

FORDYCE.—On July 19th, at Chesterton-road, Cambridge, the wife of B. E. Fordyce, M.B. Edin., of a daughter.

GARRARD.—On July 21st, at Warrior-gardens, St. Leonards-on-Sea, the wife of George Garrard, M.R.C.S., L.R.C.P. Lond., of a son.

ROBERTS.—On July 24th, at Halstead, Essex, the wife of C. Gordon Roberts, M.A., M.B. Cantab., of a daughter.

MARRIAGES.

HUDSON—FLOWERDEW.—On July 19th, at the Parish Church, Billingford, Surgeon-Captain Ernest Hudson, F.R.C.S. Eng., 15th Bengal Lancers, to Florence Hannah, second daughter of A. J. B. Flowerdew, of Billingford Hall, Scole, Norfolk.

KENNEDY—FISHER.—On the 21st inst., at the Parish Church of Longhoughton, Northumberland, by the Rev. H. G. Dickinson, M.A., vicar, John Blydesteyn Kennedy, of Stratford Hall, Stratford, Essex, to Louisa, second daughter of the late John Tulloch Fisher, of Plaistow, Essex. No cards.

TAYLOR—NELSON.—On Thursday, 19th inst., at St. Cuthbert's, Earl's Court, by the Rev. J. P. Davidson, vicar of St. Mathias, John Cleasby Taylor, M.D. Edin., M.R.C.S. Eng., of Las Palmas, Grand Canary, son of the Rev. W. Taylor, D.D., Windermere, to Frances Anne, eldest daughter of James Nelson, Esq., of 14, Nevern-square, S.W., and 8, Calle de Castillo, Las Palmas.

WALCH—ELLIS.—On July 18th, at the Parish Church, Staplegrove, Taunton, Florence Charlotte Ellis, eldest daughter of Heber Dowling Ellis, M.D., of The Elm, Staplegrove, to Charles N. Crosby Walch, M.B., fifth son of James Brett Walch, Esq., of Hillcrest, Hobart, Tasmania.

DEATHS.

LYNDON.—On July 16th, at Clongonell, Cavan, Ireland, George Ernest Lyndon, M.D., of Pembridge-gardens, London, W.

MORGAN.—On July 19th, at Bromley, Kent, Charles Morgan, M.R.C.S., aged 79.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, July 26th, 1894.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
July 20	29·92	W.	61	57	114	70	54	0·06	Cloudy
,, 21	29·81	S.W.	60	59	108	72	57	0·12	Raining
,, 22	29·84	S.W.	63	58	106	71	55	...	Cloudy
,, 23	29·76	N.E.	59	58	79	63	58	0·22	Overcast
,, 24	29·96	N.E.	62	60	104	73	58	0·04	Overcast
,, 25	29·96	S.W.	65	62	119	76	61	0·17	Cloudy
,, 26	29·90	S.W.	64	60	110	69	60	...	Cloudy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together. Those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

"THE GRIFFITHS FUND."

IT is announced that the Griffiths Fund raised by the profession, amounting to £237 1s. 6*d.*, together with a similar fund raised by the lay friends and patients of Dr. Griffiths, will be presented to him at the Albert Minor Hall, Swansea, on Monday, July 30th, at 3 P.M. Lord Swansea will be present, and will hand over to Dr. Griffiths an illuminated address and a purse of gold. Sir John Williams is also expected to be at the meeting.

Subscriber.—The so-called "Hyderabad cap" consists of a conical cap made of linen of double thickness and enclosing a small plug of wool loosely placed in its apex and fixed there by a stitch carried across the top of the cone. The base of the cone is an ellipse, so sized as to cover the mouth and nose of the patient. The sides of the cone are strengthened by pieces of whalebone or thin strips of soft, pliable wood. These cones are made for Surg.-Lieut.-Col. Lawrie in India, and are on sale in London by Messrs. Mayer and Meltzer, of Great Portland-street.

EMBALMING AMONGST THE ANCIENTS.

MR. C. S. HALL, District Medical Officer at Carlisle, read a paper at a recent meeting of the Northern Branch of the Society of Medical Officers of Health, held at Durham, on "The Treatment and Burial of the Dead," and in the course of his remarks said: "One of the most remarkable methods of dealing with corpses was that of embalming, or 'mummifying.' The Egyptians attained a marvellous skill in this art. A public funeral procession and ceremonial was first held, and after that the body was in the case of males at once handed over to the embalmers, but the bodies of females were retained until decomposition had set in. Herodotus, who visited Egypt, took great pains to acquire correct information about this singular subject. The process, which was very long, consisted in first removing all the internal organs of the body except the heart and kidneys. Most strange to say, the brain was drawn through the nose. The cavities were rinsed with palm wine and filled with spices and preservatives. Next came a long process of salting, occupying some seventy days. The body was subsequently wrapped up in linen, cemented by gums and gum resins. It was exceedingly costly. About £700 or more was charged for first-class embalming; about £240 for the second-class; the third-class was intended for the poor, and cost very little. It consisted in salting the body for about seventy days, having first washed it in myrrh. At that time it was the fashion, and everyone was embalmed; but it is evident that the process—in its early stages at all events—must have been very obnoxious. If practised nowadays it would probably be regarded as an 'offensive trade,' and dealt with under Section 112 of the Public Health Acts. None the less, Egyptian corpses mummified by this process are to be found in our museums, and even in private houses, which are as harmless and as free from any unpleasantness as a piece of wood or stone, and may certainly be regarded as a marvellous triumph of antiseptic skill."

Inquirer.—Such a chemist should be reported to the Apothecaries' Society, if the evidence of "practising" is satisfactory. We do not see any name of a registered practitioner in the Register corresponding to that given us by "Inquirer," otherwise a charge of "covering" might arise.

THE TRANSPORT OF CASES OF INFECTIOUS DISEASES

To the Editors of THE LANCET.

SIRS,—I have just seen this morning in a leading thoroughfare in Kensington a sight concerning which I should like the opinion of your readers. At about 11 A.M. I met following each other in processional array three of the ambulance carriages attached to the service of the Metropolitan Asylums Board, each carrying a nurse, and each, I think (but of this I cannot be sure), also occupied by a patient. The question I wish to put is as to the chances of the spread of infection by means of this very undesirable and surely very unnecessary procedure. In the case of small-pox I should fancy that there would be probably some risk of aerial convection. I know right well that the patients must somehow be conveyed from their homes to the fever hospitals. The point I desire to urge is that even if the cases are being taken from the same house there is no need to form a procession for the purpose. Possibly the ambulance carriages were only on their way to fetch patients. This would render the parade somewhat less objectionable, but by no means desirable. These ambulances are now well known by sight about the streets, and the massing of them together is calculated to frighten and distress timid people and unnecessarily to suggest to them a "terrible spread of infectious disease." There can be no reason whatever why the ambulances should not be sent singly, and I trust the attention of the managers of the Metropolitan Asylums Board will be directed to the matter.

I am, Sirs, yours faithfully,

July 26th, 1894. A MEDICAL RESIDENT IN THE NEIGHBOURHOOD

THE BADGE OF THE CONGRESS OF THE INSTITUTE OF PUBLIC HEALTH.

A VERY pretty badge has been prepared for the members of the Congress of the British Institute of Public Health. It has something of the oval shape and mode of fastening of the ordinary sleeve-link. The name of the institute is in gilt letters round the margin of the badge. The emblem is the figure of Hygeia, gilt upon a ground of blue enamel. A certain number of the badges are made in brooch form for ladies. It is a copy of the President's badge, and is copied from a figure in the British Museum.

THE ADVERTISEMENT OF PRIVATE ARRANGEMENTS FOR CONSULTATION

Partners.—This cannot be done properly by circulars. It can only be done properly by private intimation by mouth, or by notice in the consulting-room, or in private letters.

A "NEW MEDICAL DEFENCE ASSOCIATION, LIMITED."

A CORRESPONDENT sends us the announcement of what is called "the new Medical Defence Association," with expressions of regret that it should be thought necessary or desirable to propose such an addition to the societies already existing for the legitimate defence of medical men. The association is to be a veritable "company," incorporated under the Companies' Acts, 1862 to 1893. The board of administration is to consist of the following gentlemen: Leslie Phillips, M.D. (Birmingham); Fancourt Barnes, M.D.; George Carpenter, M.D.; A. H. Carter, M.D. (Birmingham); Frederick Eve; E. Luke Freer (Birmingham); F. C. Mears, M.B., Surgeon, Tynemouth Infirmary; J. R. Polson, M.R.C.S. (Worcester); and J. W. Taylor, F.R.C.S. (Birmingham). The features of the association distinguishing it from other societies of the sort are that it will support no internecine litigation and will have a cash reserve instead of a paper guarantee, being a company, consisting of shareholders, paying £1 per share, and contemplating an issue of 10,000 shares. We must leave it to our readers to decide on the merits of this scheme in its financial aspects. We certainly do not think that the profession requires the establishment of a third society. We shall convey the injurious impression to the public that our profession is very vulnerable and needs much defence. For the defence which it does need we think the existing societies ample. It is not necessary to say that they have made no mistakes. They are young yet and at that stage at which some mistakes are perhaps unavoidable. But on the whole the profession is well supplied, and we think is not likely to encourage the formation of a third Defence Union in the shape of a "limited company."

"TRIKRESOL."

To the Editors of THE LANCET.

SIRS,—As the sponsors of trikresol in this country we ask your permission to reply to the letter of MESSRS. Calvert in THE LANCET of last week.

Carbolic acid such as No. 5 may for many years have done good service; but every chemist knows that it is an indefinite mixture of carbolic acid and cresols, neutral oil, pyridine, naphthalin, and other bases, which vary very widely in antiseptic value and retard each other. Their distinctive physical and chemical characteristics, however, assist in splitting and isolating the three—namely, para- meta- and orto-cresols—from the bulk of less useful components, and these Messrs. Schering term in short "trikresol." They have well-known boiling points and specific gravity, and far greater solubility in water, which make them freely distinguishable from No. 5 carbolic. Professors Fraenkel and Gruber have established the relative antiseptic value of one part trikresol to equal three of carbolic, and painstaking research in this country has confirmed their finding and established the toxity of trikresol as one-third of carbolic. Our high opinion of British medical scientists will no doubt justify our expectation of further satisfactory confirmation in this country.

We are, Sirs, yours faithfully,

Cross-lane, E.C., July 24th, 1894. A. & M. ZIMMERMANN.

STEPS TAKEN IN PRACTICE.

A PRACTITIONER in a Swiss town had the curiosity to count his steps—by means of a pedometer, of course—during the whole of 1893. He found that, without reckoning the walking about his own room, he took 9,760,900 steps during the year, giving a daily average of 26,742, of which from 1500 to 2000 were up and down stairs. When he took as many as 30,000 in a day he always felt tired, and if many more than that there was some stiffness of the legs next day.

FRESH AIR FOR EAST LONDON CHILDREN.

To the Editors of THE LANCET.

SIRS,—For several years, by the generosity of your readers, our committee have given a day in the country to thousands of poor, and in many cases orphan and sickly, East London children, who without such help would not have known a single day's country holiday during the whole year. The entire cost, including rail fare and substantial meal, is under one shilling per head. May we hope for the practical sympathy of your readers again this year? The enclosed statement, audited duly by chartered accountants, of our vast and varied unsectarian work here in East London, amongst all classes and nationalities, will, I think, tell its own tale. Every gift, great or small, will be promptly acknowledged by

Yours truly,

J. W. ATKINSON
(Twenty-five years, Latimer Church, E.).

Claremont, Cawley-road, London, E.

*** The Rev. J. W. Atkinson encloses in his letter a statement of receipts and expenditure, which shows that the funds are administered entirely for the benefit of the Mission, and that the cost of administration is on the whole very low.—ED. L.

THE TAIT FUND.

THE treasurer of this fund has received £2 2s. from Sir William Jenner, Bart., which was accidentally delayed in transmission.

Mr. H. J. Pulling.—We regret that we are unable to afford any information beyond that which is contained in our advertisement columns.

Mr. Clark W. Harrington.—Our advocacy would not, we fear, advance our correspondent's case; nor do we ever give professional opinions.

The Gilbert Book Co., St. Louis, Ill.—In these matters the experiences derived from one case really amount to nothing.

Dulwich's communication was received and duly acknowledged last week.

J. McL. and *W. R.*—We do not recommend individual practitioners.

A General Practitioner's communication will receive attention.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (1 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynecological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.).

TUESDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1.30 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY.—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), Gt. Northern Central (2.30 P.M.), King's College (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.).

THURSDAY.—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (2 P.M.), Chelsea (2 P.M.), Soho-square (2 P.M.), North West London (2 P.M.).

FRIDAY.—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), Cancer (2 P.M.).

SATURDAY.—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

LECTURES AND ADDRESSES.

MONDAY.—ST. JOHN'S HOSPITAL FOR SKIN DISEASES (Leicester-sq., W.C.).—6 P.M. Dr. Morgan Dockrell: Diseases of Sweat Glands.

During the week marked copies of the following newspapers have been received:—*South Eastern Gazette, Folkestone Express, Skibbereen Eagle, Dundee Advertiser, Brighton Gazette, Birmingham Daily Post, Gorton Reporter, Sussex Daily News, Montgomery Express, Isle of Man Times, Kent Times, New York Herald, Stirling Journal, Truth, Family Doctor, Scottish Field, Cassell's Saturday Journal, City Press, Scotsman, Barrow Herald, Times of India, Builder, Sunday Times, Leeds Mercury, Manchester Guardian, To-day, Pioneer Mail, Architect, Citizen, Morecambe Times, Leicester Post, Sheffield Weekly Telegraph, Lightning, Liverpool Daily Post, Electrical Engineer, Yorkshire Post, Bristol Mercury, Cheltenham Examiner, Oswestry Advertiser, Liverpool Daily Courier, Haverfordwest Telegraph, Cornwall Gazette, Llangollen Advertiser, Bombay Gazette, Hertfordshire Mercury, Norfolk Weekly Standard, London, Weekly Free Press and Aberdeen Herald, Reading Mercury, Sanitary Record, West Middlesex Standard, Local Government Chronicle, Local Government Journal, Surrey Advertiser, West Middlesex Advertiser, Guy's Hospital Gazette, Galignani Messenger, Australasian Medical Gazette, Thame Guardian, Nyassa News, Evesham Journal, Lancaster Guardian, Surrey Comet, Paddington, Kensington, and Bayswater Chronicle, Southern Echo (Bournemouth), Glossop Times, Daily Gleaner (Kingston, Jamaica), Lowestoft Weekly Press, Carlisle Patriot, South Wales Daily News, &c., &c.*

Communications, Letters &c. have been received from—

A.—Dr. Miguel Arango, London; Mr. F. Arnold, High Wycombe; Rev. J. W. Atkinson, London; Mrs. Astey, St. Leonards-on-Sea; Messrs. Armour and Co., London; Messrs. Atkinson and Philipson, Newcastle-on-Tyne; Argyll Baths, London, Manager of; Aberdeen Royal Infirmary, Treasurer of.

B.—Sir William H. Broadbent, London; Dr. F. Bagshawe, St. Leonards-on-Sea; Dr. de Brandt, London; Mr. H. Bush, Bristol; Mr. D. Biddle, Kingston-on-Thames; Mr. J. N. Bredin, London; Messrs. Brand and Co., London; British Institute of Public Health, Hon. Secretary of; British Medical Benevolent Fund, Hon. Secretary of; British Medical Association, Secretary of; Bonus, London.

C.—Dr. J. E. Creswell, Suez; Mr. H. A. Cruttwell, London; Mr. J. Jackson Clarke, London; Mr. H. V. Craster, London; Mr. C. H. Cunningham, London; Messrs. Crossley, Moir and Co., London; Messrs. T. Canton and Co., London; Messrs. T. Cook and Son, London; Cancer Hospital, London, Secretary of; Cortland Wagon Co., London; C. P., Burton-on-Trent; Clapton.

D.—Dr. F. H. Daly, London; Dr. Langdon Down, Hampton Wick; Mr. W. Durrant, London; Mr. G. S. Davis, Detroit, U.S.A.; Domen Belts Co., London, Manager of.

E.—Mr. R. Ellis, Newcastle-on-Tyne; Messrs. Eason and Son, Dublin; Hxpress Dairy Co., Ltd., Secretary of.

F.—Dr. Colcott Fox, London; Miss C. Forrest, Bournemouth; Messrs. Ferris and Co., Bristol.

G.—Glasgow University, Secretary of; Great Eastern Railway Co., Continental Manager of; General Medical Council Office, London, Registrar of; Great Northern Railway Co., Manager of; Great Western Railway Co., Superintendent of.

H.—Dr. H. Hilliard, Caterham Valley; Mr. W. Horrocks, Bradford; Mr. J. Halliwell, Winchcombe; Mr. J. R. Hammond, Deal; Mr. Murtaugh Houghton, Weston-super-Mare; Mr. Charles Higgins, London; Mr. J. W. Humphreys, Colon; Mr. O. L. Holst, Eastbourne; Mr. J. Harold, London; Mr. J. Heywood, Manchester; Messrs. Hurst and Blackett, Limited, London; H.

—Dr. J. Ince, Swanley; Dr. W. E. Irvine, Montevideo.

J.—J. T., London.

K.—Messrs. Kenyon and Lord, Manchester.

L.—Dr. E. S. Lee, St. Leonards; Dr. T. M. Legge, Brighton; Mr. J. Lawrence-Hamilton, Brighton; Mr. Henry Lankester, London; Mr. T. Laffan, Cashel; Messrs. Lee and Nightingale, Liverpool; London, Chatham, and Dover Railway Co., Secretary of; London and South Western Railway Co., Superintendent of; *Leslie's Illustrated Weekly*, New York, Proprietor of; London and North Western Railway Co., Superintendent of; Liverpool and London and Globe Insurance Co., Secretary of; L. M., London.

M.—Dr. Albert Mills, Brussels; Mr. John Milne, London; Mr. W. F. Mason, Manchester; Messrs. Maythorn and Son, Biggleswade; Maltine Co., London.

N.—Dr. James Neil, Oxford; Dr. E. A. R. Newman, Dere Ishmail, India; Mr. F. Norton, London; Mr. E. Nettleship, London; Nottingham General Hospital, Secretary of; Noyce, Winchester.

O.—Dr. George Ogilvie, London; Dr. Leslie Ogilvie, London; Dr. P. O'Connell, Cork; Mr. J. M. Owen, Fishguard; Messrs. Oppenheimer, Son, and Co., London.

P.—Mr. Y. J. Pentland, Edinburgh; P. W., London; P.O. Box 68, Virginia, U.S.A.

R.—Dr. J. Rorie, Dundee; Dr. W. Rogers, Lampleigh; Mr. L. Rawsthorn, Preston; Mr. E. G. Rivers, Liverpool; Mr. A. Dean Roberts, Lincoln; Messrs. J. Richardson and Co., Leicester; Royal Aquarium and Summer and Winter Garden Society, Ltd., Director of; Royal Ear Hospital, London, Secretary of; Royal British Nurses' Association, London, Secretary of; Ready Money, London; Reflector, London.

S.—Dr. N. J. Simpson, Calcutta; Surgeon-Captain R. R. Sleman, London; Lord Stamford, London; Mr. Percy Smith, London; Mr. G. Shield, London; Mr. J. P. Smith, Lowestoft; St. Peter's Hospital, London, Secretary of; Stockport Infirmary, Assistant Secretary of; Swansea Hospital, Secretary of; Sussex County Hospital, Brighton, Secretary of; Solicitor, Manchester.

T.—Dr. Charles Bell Taylor, Nottingham; Dr. Lloyd Tuckey, London; Dr. J. K. Tomory, Halkirk; Mr. L. Thelwall, Chesterfield; Mr. S. Thorp, London.

U.—Union Steam Ship Co., Ltd., Secretary of.

W.—Dr. J. W. White, Strathbungo; Dr. T. Stacey Wilson, Birmingham; Mr. E. Wilson, Exeter; Mr. H. Wichells, Wellingboro'; Mr. C. F. Weeks, Birmingham; Mr. E. L. Worth, Anderton; Messrs. Warrick Bros., London; Messrs. Woolgar and Roberts, London; Messrs. J. Wright and Co., Bristol; West Riding Asylum, Wakefield, Clerk of; Westminster Hospital Medical School, Secretary of; Whalley's Sanitary Fluid Co., Limited, Secretary of; Wiesbadener Brunnen-Comptoir, Wiesbaden.

Y.—Mr. P. M. Yearsley, London.

Letters, each with enclosure, are also acknowledged from—

A.—Dr. E. Allen, Hawes; Apothecaries' Hall, Dublin, Governor of; Alpha, Glasgow; Ashton-under-Lyne District Infirmary, Secretary of; Assistant, London.

B.—Dr. J. T. Balmford, Salford; Dr. W. H. Bailey, London; Messrs. Bleasdale and Co., York; Messrs. Black and Co., London; Barnwood House Hospital, Secretary of; Bradford Infirmary, Secretary of; Bonsa, London; Beta, London.

C.—Dr. A. F. Craig, Glasgow; Dr. J. E. Creswell, Suez; Mr. J. J. Clark, Brighton; Mr. E. T. Chamberlain, Southampton; Messrs. Cassell and Co., London; Messrs. Clayton, Jewett and Ward, Blackburn; Confidential, London; Cœlebs, London; Conrad, Bournemouth.

D.—Mr. M. Duggan, Castle Eden; Mr. J. T. Davenport, London; Mr. T. S. Davies, Pontyberem; Mr. J. W. Davies, Ebbw Vale; Dowlais Iron Co., Glam.; Durham County Hospital, Secretary of; Doctor, London; Duty First, London.

E.—Experienced, London; E. G., London; E. J. P., Hayes; Errol, London.

F.—Dr. B. Fenwick, London; Dr. G. E. Fuller, Market Drayton; Mr. W. J. Fox, Chesterfield; Mr. J. Feaver, London; Messrs. Fourmont and Son, Nottingham; Flintshire Dispensary, Holywell, Secretary of; Fortunatus, London.

G.—Mr. J. Guest, Ventnor; Mr. E. Grillon, London; Mr. W. Gilyard, Bradford; Mr. W. B. Griffith, Ravenglass; Mrs. Gann, Hayling Island; Grove House Private Asylum, Salop, Superintendent of.

H.—Dr. H. J. Hardwicke, St. Leonards-on-Sea; Dr. J. Holmes, Whitefield; Dr. A. H. Howe, Stevenston; Mr. D. Hume, London; Mr. J. Heywood, Manchester; Mr. J. H. Haywood, Nottingham; Mr. P. A. Heeland, Limerick; H., London; Hortus, London; H. T., London; Hereford, London.

I.—Messrs. Ingram and Royle, London; Iota, London.

J.—Mr. A. E. Johnstone, London; Miss H. Jepson, Bradford-on-Avon.

K.—Dr. L. Kidd, Enniskillen; Messrs. Keith & Co., Edinburgh.

L.—Dr. J. Lambert, Cottingham; Mr. W. K. Loveless, Stockbridge; Mr. H. Littlewood, Leeds; Mr. B. W. Lamb, Wolverhampton; Mrs. Leak, London; Lancaster Infirmary, Treasurer of; Lancashire County Asylum, Whittingham; Locum, High Wycombe; L., Oxford; Locum, London; L. M., London.

M.—Dr. R. M. Miller, London; Dr. J. C. Maxwell, Bridgwater; Mr. J. B. Monks, Blackburn; Mr. J. Milne, London; Mr. G. J. Morgan-Kinnersley; Mr. E. C. Mahony, Deddington; Mr. J. Macfeat, London; Mr. W. McCoy, Barnsley; Manchester Royal Eye Hospital, Secretary of; Medicus, Leeds; Medicus, Manchester; M.D. Cantab., London; M., London.

N.—Mr. W. J. Nicholls, St. Ives; National Provident Institution, Secretary of; Newcastle-on-Tyne Dispensary, Secretary of; Northampton General Infirmary, Secretary of; Nucleus, London; Noyce, Winchester.

P.—Miss Pudney, Earls Colne; P., London; P. H., London.

R.—Dr. G. W. Rutter, Colwyn Bay; Dr. W. Robinson, Shap; Miss Rogers, Kilkenny; Messrs. Richardson Bros. and Co., Liverpool; Messrs. W. A. Ross and Sons, Belfast; Messrs. H. and J. Reading, London; Messrs. J. Robbins and Co., London; Royal Cornwall Infirmary, Truro, Secretary of; Rex, London.

S.—Dr. W. Sproule, Dunfermline; Dr. E. Sutcliff, Torrington; Dr. C. F. Seville, Helston; Dr. A. Sprott, Penrith; Dr. W. H. Smith, Meriden; Mr. R. Stoney, London; Mr. J. B. Spence, Burntwood; Mr. Sangster, London; Southerton House, London; Substitute, London; Sigma, London; Severn, London; S. L., London; Scalpel, London.

T.—Mr. J. Taylor, Ulverston; Mr. J. Thin, Edinburgh.

U.—Upsilon, Preston.

V.—Viator, London.

W.—Dr. A. W. H. Walker, Harrogate; Dr. D. J. Williams, Llanelly; Dr. A. J. Wall, Paris; Mr. W. H. Williams, Llanfair; Mr. S. Wand, Leicester; Mr. W. Walker, Greenock; W. S., London; W., Brentford; W. H. P., Newbury; Weston, London.

Y.—Yorkshire College, Leeds, Secretary of.

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Terms for Serial Insertions may be obtained of the Publisher, to whom all letters relating to Advertisements or Subscriptions should be addressed.

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